

Non-consumptive Ocean Recreation in Oregon:

Human Uses, Economic Impacts & Spatial Data



Submitted under a joint effort of the
Surfrider Foundation, NaturalEquity, and Ecotrust

March 3, 2011

**Chris LaFranchi
Collin Daugherty
NaturalEquity**



CONTENTS

INTRODUCTION	1
METHODS	4
Collected data.....	4
Recruiting Survey Respondents.....	5
Overcoming Obstacles To Collecting Data On Coastal Visitors.....	7
Using Internet Surveys to Collect Data on Shore-Based Coastal Visitors	8
RESULTS.....	10
Confidence in the Results.....	10
Representativeness	11
Extrapolating from sample to Population: simple point estimates	18
The Economic Impact Of Coastal Visitors	21
Geospatial Data.....	21
WHAT HAS BEEN ACCOMPLISHED AND WHAT CAN DEVELOPED FURTHER	22
REFERENCES	31
ATTACHMENTS.....	32
Frequently Asked Questions.....	32
Survey Instrument Document.....	33

Acknowledgements

We thank Ecotrust for working with us to further develop the geospatial tools used to collect spatial data, and Surfrider Foundation staff for providing insight into Oregon's recreational use patterns and outreach to the recreational user community.

We also thank staff from the Oregon Department of Land Conservation & Development and the Oregon Department of Fish & Wildlife for providing support and guidance throughout the project.

Finally, we thank Linwood Pendleton for his continued support in developing the online tool and furthering its application.

Funding was provided by the David and Lucile Packard Foundation.

INTRODUCTION

Roughly half of all Americans visit the coast each year for recreation. Coastal recreation contributes to coastal businesses and also contributes directly to the economic wellbeing of coastal visitors. At the national level, coastal recreation is estimated to generate tens of billions of dollars in local expenditures and similar magnitudes of value in terms of the economic wellbeing of local coastal visitors (see Pendleton 2008 and Pendleton and Kildow 2006).

Ecosystem-based management, marine spatial planning, and other types of coastal management require information about who uses the coast, what they do, and the economic contributions of different types of uses. Regulators, especially those contemplating the restriction of access or activities, need to know who might benefit and who might be harmed from such actions, and what the economic consequences of such actions might be. Similarly, to assess the effect of coastal management policy actions on people, we need quantitative information about human uses of the coast before/after and with/without the policy action.

The State of Oregon has 362 miles of coastline and about 3.8 million permanent residents. The coastal and marine environment includes an array of long sandy beaches, rocky intertidal areas, numerous capes and bluffs, and several large estuarine areas. Oregonians undertake millions of trips to the coast each year and participate in a range of activities such as scenic enjoyment, bird watching, kayaking, surfing, storm watching, swimming, and fishing.

Oregon's coastline has recently been identified as possessing key attributes needed for the successful development of renewable ocean energy, particularly wave energy. These attributes include abundant ocean energy, available technologies and expertise, and the interest and support of state government leaders. Indeed, since 2006 over a dozen preliminary permit applications have been filed with the Federal Energy and Regulatory Commission (FERC) for wave energy projects off the coast of Oregon (FERC 2009).

This keen interest in renewable ocean energy in Oregon has illuminated the many challenges associated with accommodating a new use of the ocean, while still ensuring sufficient protection of the nearshore ecosystem and existing human uses. In particular, the limitations of FERC's applicant driven permitting process have been brought in sharp relief; namely, the absence of area-based planning to effectively address trade-offs and minimize conflicts between different sectors.

In response to these issues, the state of Oregon signed a historic memorandum with FERC in March, 2008 outlining a framework for coordination on the review of proposed wave energy projects. One of the key elements of the MOU is acknowledgement of Oregon's intent to prepare a comprehensive plan for the siting of wave energy projects in Oregon's Territorial Sea. The expectation is that a Territorial Sea Plan that is developed with credible science and the participation of all relevant stakeholder groups will help Oregon meet its obligations under Statewide Planning Goal 19 (Ocean Resources):

To conserve marine resources and ecological functions for the purpose of providing long-term ecological, economic, and social value and benefits to future generations (OAR 660-015-0010(4))

The Oregon Department of Land Conservation and Development (DLCD) is currently coordinating the development of the comprehensive plan with a schedule of formal adoption by the DLCD Commission by 2012. To support this effort, the Department has established a Territorial Sea Plan Advisory Committee to facilitate participation by all relevant stakeholder groups and members of the public. In addition, the Department is facilitating the collection and integration of geospatial information on both ecological features and human uses to inform the planning process.

Geospatial data on non-consumptive recreational ocean use has been identified as a critical science need for the development of Oregon's comprehensive plan. This sector includes a range of activities such as: beach-going; water sports (e.g., surfing, diving, kayaking, etc.); and boating (e.g., motoring, sailing, etc.). These activities are geographically and seasonally ubiquitous along the Oregon coast, yet detailed information on their occurrence and extent has been limited.

In addition, non-consumptive recreational ocean use provides significant economic and social benefits to coastal communities and the state of Oregon as a whole. These impacts include both direct economic expenditures (e.g., hotel visits, dining, etc.) as well as social benefits such as citizen enjoyment and human well-being. As Oregon moves forward with the development of its comprehensive plan, it is critical that these effects are better understood in a geospatial context. Such information will help provide for adequate protection of important uses and values, as well as ensure consistency with Statewide Planning Goal 19.

Information on non-consumptive recreational ocean use has also been identified as an important science need for Oregon's marine reserve program. On October 21-22, 2008, the Science and Technical Advisory Committee (STAC) to the Oregon Ocean Policy Advisory Council (OPAC) held a workshop in Newport, Oregon on *Economic Data and Analysis of Marine Reserves*. The resulting report identified non-consumptive use as a key research area to inform the management of marine reserves in Oregon. Specific recommendations focus on the collection of information on all ocean user groups, as well collection of spatially explicit economic data for specific marine reserve sites (STAC 2008). Accordingly, the data sets and products generated from this study may also provide significant utility for the state's marine reserve program.

This study provides high-quality spatially explicit information on current non-consumptive recreational ocean use on the Oregon coast. Specifically, this study: identifies and estimates the size of the Oregon non-consumptive recreational ocean user community; supplies spatially explicit information on current non-consumptive ROU use including activity, extent, and demographics; estimates the economic impacts and describe the profile of non-consumptive ROU to Oregon's communities; and integrates baseline data into Oregon MarineMap (GIS) to inform Oregon's Territorial Sea Plan (TSP) update and other relevant decision-making.

Figure 1 Study area: Oregon coast and county boundaries



The geospatial survey we use allows respondents to select coastal areas on an interactive map in response to questions about where the respondent visits the coast generally and on their last trip specifically. In one question, respondents are asked about their total annual visits to regions of the Oregon coast (see Figure 1) defined along county boundaries. In a later question, respondents provide high resolution spatial data on portions of the coastal and marine environment used during their most recent trip to the coast. This tool collects detailed information both about the respondent and about their coastal visit and allows us to cover large stretches of coastline in a single effort.

METHODS

Study area: the Oregon coast (see Figure 1.0 above)

Study population: adult (>18 years of age) residents of Oregon and several Washington counties that include and surround the metropolitan city of Vancouver, Washington.

Table 1: Study population

Study population (sample frame)	3,369,506
Oregon adult population (>18 population)	2,953,407
Washington* adult population (>18 population) (*Counties: Clark, Cowlitz, Pacific, Wahkiakum)	416,099

An online survey was developed to sample Oregon and a subset of Washington residents using a web platform and ‘Knowledge Panel’ methodology supported by Knowledge Networks (KN) - see below for details. The web platform incorporates OpenOcean Map, a tool designed by Ecotrust that elicits and collects spatial data on coastal visitation, including on-the-water spatial data that corresponds to coastal activities that occur in the marine environment. OpenOcean Map allows for the collection of spatial data across very large stretches of coast using an internet-based, interactive display.

The geospatial module presents digital images of the coast that incorporate satellite imagery with street and basic infrastructure overlays. These digital images are interactive in that they allow respondents to move up and down the Oregon coast and change the spatial resolution as desired until a specific coastal area is identified. Thus, the geospatial module allows respondents to effectively “drill-down” to the exact coastal area visited during their most recent coastal trip.

We focus primarily on private, shore-based visits in this report. Our goal is to collect basic geo-referenced data that can be used to: a) develop a quantitative baseline of shore-based visitation to coastal sites and regions (including annual coastal “trips,” the activities people undertake when they visit the coast, and demographic information about visitors), b) estimate the economic impacts (expenditures) associated with these visits, c) understand the significance of private, shore-based coastal recreation in the context of area based management, and d) create a tool that can be used to cost-effectively monitor the impact of marine protection and coastal management on shore-based recreational users. In this report, we summarize our effort and present a quantitative baseline of coastal visitation.

Collected Data

Data were collected on the demographics of respondents, whether or not the respondent has visited the coast in the last 12 months, coastal activities undertaken (e.g., beach-going, wildlife viewing, fishing, kayaking, and diving), the spatial distribution and frequency of such activities across a set of coastal areas, and financial expenditures from the most recent coastal trip. The full set of survey questions can

be found in Appendix 2. Demographic data about visitors are directly comparable to US Census data. At present, demographic information is collected for all respondents and detailed data on coastal activities are collected for the entire Oregon Coastline

Recruiting Survey Respondents

The study utilized two modes of data collection to elicit information from respondents. These modes included an internet panel (i.e. Knowledge Networks panel) and an ‘opt-in’ survey that allowed respondents to complete the survey online.

Internet Panel

Using a residential address-based system, Knowledge Networks randomly selects and recruits survey takers to an internet panel that is designed to be representative of the study population. An address-based system (ABS) system is used because it allows KN to recruit from difficult-to-survey populations:

- Cell phone-only households,
- African Americans,
- Hispanics, and
- Young adults.

Source: <http://www.knowledgenetworks.com/>

Standing panel members are randomly directed to the survey and are not financially compensated if they decide to complete the survey. Consequently, respondents can neither self-select for the survey, nor are they financially induced to complete surveys hosted by KN, including the survey described here.

Survey data were collected in two successive “waves” temporally distributed across a calendar year to capture seasonal effects. The waves were timed to capture coastal use data during portions of the year that typically differ in term of temperature and level of precipitation on the Oregon coast. The first wave was conducted from March 31st to May 10th, 2010, and the second wave was conducted from August 11th to September 14th, 2010. Residents were asked about trips that occur up to three months prior to the survey date.

Two survey “waves” resulted in 4,072 completed surveys from residents of Oregon and four Washington Counties (see Tables 2 and 3).

Table 2: Internet panel sample

Internet panel sample	4,072
Wave 1 (March 31-May 10, 2010)	2,093
Wave 2 (August 11-September 14, 2010)	1,979

Table 3: Internet panel residency (In which state do you live?)

	Wave 1	Wave 2	Total
Total responses	1,783	1,980	3,763
Oregon	1,551	1,720	3,271
Washington	220	260	480
Other	12	0	12
Oregon %	87	87	87
Washington %	12.3	13	13
Other %	0.7	0	0

Opt-in Survey

In addition to the internet panel, survey data were also collected through a non-random “opt-in” process that allows respondents to complete the survey online. As with the internet panel, the online survey was hosted on a platform provided by Knowledge Networks. Respondents provide their email contact through a web-based landing page and are emailed a web link providing access to the survey.

Collecting data using an internet opt-in mode provides several advantages:

1. It provides a participatory approach to survey response for stakeholders;
2. It may increase the likelihood that stakeholders will trust the survey results and therefore accept their use in policy-making processes;
3. It allows capture of responses from infrequently used places and infrequently practiced activities that might not be detected through only an internet panel approach

Despite these advantages, data collected through an internet opt-in mode have some important limitations. Because respondents self-select to participate in the survey, the sample is neither random nor representative of the study population. For these reasons, **data from the opt-in survey are not used for extrapolation or to generate findings related to demographic profile or economic impacts.**

With respect to geospatial information, the opt in mode does provide useful data about coastal use patterns by allowing individuals, including avid users, to participate. This information is particularly relevant for niche activities such as windsurfing or SCUBA diving that are practiced by a very small percentage of the population, and thus not well represented through the internet panel. However, because the sample is non-representative, opt-in spatial data are not used to generate conclusions about the study population’s relative use of different places on the Oregon coast.

The opt-in survey was hosted online from March 30, 2010 to August 31, 2010. To encourage participation in the survey, the Surfrider Foundation conducted a range of outreach and recruitment strategies between December 1, 2009 and August, 2010. These strategies included targeted outreach to a range of non-consumptive user associations, memberships, and businesses throughout the state. Communication was primarily conducted through meetings with key representatives or “gate-keepers”, and focused on: describing the specific purpose and intent of the project; addressing questions or concerns regarding the handling, use, and analysis of data collected; and encouraging groups and businesses to promote participation in the survey to their members and customers.

In addition to leveraging the participation of other non-consumptive groups and businesses, the Surfrider Foundation also conducted the following activities to promote understanding and participation in the study:

- Direct mailing to 2,500 registered boaters in Oregon (emphasis on sail boats, personal water craft, and in board motor types)
- Distribution of over 2,000 postcards at business, community events, non-profit organizations, presentations, and partner organizations
- Media release distribution to all major print media in Western Oregon
- Frequent updates on the study and how to participate via blog announcements, list server announcements, newsletters, and social media
- Distribution of a frequently asked questions (FAQ) document
- Word of mouth discussion and encouragement to participate with recreational users, business owners, organized groups

In total, 254 respondents participated in and fully completed the opt-in survey.

Overcoming Obstacles to Collecting Data on Coastal Visitors

One reason good data on coastal recreation are scarce is that these data are hard to collect. There are hundreds if not thousands of coastal access points on the Oregon coast available to bird watchers, tidepoolers, kayakers, divers, and others. With so many access sites across the state, the costs of collecting good data on coastal visitors, using on-site methods, is very large. The large number of sites also makes phone and mail-back surveys difficult. It would be extremely time consuming to ask potential phone respondents about their visits to all relevant sites. A paper mail-back survey would quickly become very long if we attempted to collect yes/no site visitation data for all relevant sites.

Collecting data on coastal visitors is complicated further by the fact that coastal visitors use the coast at all hours from just before dawn for surfers and fishers, to after dusk for beachcombers and divers. The long time interval each day when coastal visits can take place make on-site intercept surveys difficult; failure to collect representative data at all times during the day could mean important visitor groups (e.g. surfers in the morning, divers in the evening) might be missed. (See Chapman and Hanneman 2001 and also Nelsen et al. 2007 for a discussion of this problem as it relates to surfers.)

Finally, many coastal uses are undertaken by small numbers of avid visitors (e.g. scuba diving, surfing, kayaking). While these visitors may represent a significant number of visits (because of the high frequency of coastal visitation) and also local spending (especially when the activity requires gear), these visitors are hard to intercept using traditional phone methods because their occurrence in the general population is so small. We refer to this issue as the “uncommon activity problem.” To adequately encounter a sufficient number of respondents for these uncommon activities requires that there are a large number of survey respondents in a randomly chosen sample pool or that targeted methods are used to identify potential respondents from these groups.

Similar to the uncommon activity problem is the fact that the majority of visits occur at a relatively small number of coastal access sites with many sites hosting only a small number of visits each year. This “infrequent use problem” means that even on-site intercept surveys result in only a small number of responses per unit of survey effort for these infrequently used sites. Random methods, including mail-back and phone surveys, would require large numbers of sample respondents in order to get adequate coverage of these relatively infrequently used coastal sites. The “infrequent use problem” makes

collecting shore-based visitor data, using traditional methods, difficult at the smaller pocket beaches and hard to access coastal sites along the Oregon coast.

Using Internet Surveys to Collect Data on Shore-Based Coastal Visitors

Internet-based surveys may hold promise as a cost-effective way of collecting data on private, shore-based coastal visitation. Internet surveys already have been employed for political surveys (see Berrens et al. 2003), health surveys (see Couper et al. 2007 and Schonlau et al. 2004 for a California-based survey), for attitudes about watershed management (Kaplowitz et al. 2004), and to collect information on environmental values (Fleming and Bowing 2007, Marta-Pedroso 2007, and Rudd 2006). Internet surveys have a number of key advantages over other surveys that make them particularly attractive for collecting data on private, shore-based coastal uses.

First, the low cost per response means many more internet survey responses can be collected for the same price as a smaller number of intercept or telephone surveys.

Large numbers of responses provide several important advantages. First, all things being equal, the larger the sample the smaller the statistical error of the estimated responses (the common \pm X% seen in polling results). Also, large samples also help address the problems of uncommon activity choice (Berrens et al. 2007) and infrequent site use.

Internet surveys also have the advantage of being better at presenting complicated data, interactive visuals, and branching patterns of questions. For coastal visitors in Oregon, this means an internet survey can be used to ask detailed questions about specific activities (e.g. when you went to the coast, did you intend to go surfing? If so, where did you go? etc.). While such branching is potentially possible using phone surveys, it cannot be done easily in mail-back or intercept surveys (except where intercept surveys use computers or the mail surveys are extremely long).

Internet surveys also can be used to show respondents maps about coastal sites. In our survey, we worked with Ecotrust to develop GIS interfaces that would allow users to choose the location of their last visit to the coast from among hundreds of potential choices. Unlike phone surveys which can only provide long lists of sites, some of which have similar or identical names, the interactive GIS interface allows the respondent to identify sites by name, geography, or proximity to streets and highways.

Finally, online surveys provide anonymity for the respondent – which may be particularly important if certain coastal activities may be subject to public scrutiny (e.g., the taking of live organisms from tidepools.)

Like all survey methods, internet surveys have their limitations. Above, we discussed some of the administrative difficulties associated with the application of mail-back, intercept, and random telephone surveys for collecting data on coastal visitation. In addition to administrative and technical issues, all surveys face certain limitations regarding their representativeness:

- The coverage of the sample frame may be different than the population of interest, due to uneven access to the survey mode (e.g. certain parts of the relevant population may not have access to the internet or land-line telephone service).
- There may be biases in who chooses to
 - undertake surveys (the opt-in problem or self-selection bias)
 - complete surveys (sample completion bias)

One important thing to consider when weighing the potential advantages and disadvantages of internet surveys is not the degree to which internet surveys are perfectly representative, but how their advantages and disadvantages compare to other survey modes. Mail-back surveys always have suffered from relatively low-response rates (Fleming and Bowden 2007) and telephone surveys are increasingly affected by declining response rates (Curtin et al. 2005) due, in part, to the fact that more households have given up landline telephones in order to use mobile phones exclusively.

While the application of internet surveys is still relatively new, a number of studies have attempted to compare internet surveys with other modes of survey administration including on-site intercept surveys (intercept surveys), random digit dial (RDD) telephone surveys, mail back surveys, and combinations of these.

Our internet panel survey is most similar to random digital dial (RDD) or random mail-back surveys. Like RDD, telephone surveys or random mail-back surveys, a number of commercially available internet survey companies offer some form of survey population that is intended to reflect the public at large. Internet panel surveys use random samples of a large, pre-selected group of volunteer respondents who have agreed to participate in surveys. Several private services (notably Knowledge Networks, Harris Interactive, and InsightExpress) offer panels that are supposed to be representative of the general population. Web-advertised surveys use advertisements or links on commonly used websites to recruit voluntary participation in the survey. All of these methods are challenged to collect samples of respondents that are representative of the general population.

There is little agreement in the small number of Internet-based environmental valuation and preference studies regarding the demographic similarity of Internet-based respondents compared to other survey modes (See Berrens et al. 2007, Marta-Pedroso 2007, and Fleming and Bowden 2007). Fleming and Bowden (2007) find respondents to internet and mail-back surveys to have similar response rates and respondents had similar demographic profiles. There are no observable differences (at the 95% level of significance) between gender, mean age, and education of the respondents. Respondents from the mail survey report higher mean household income. They conclude that Internet-based surveys are a promising method for economic valuation (Fleming and Bowden 2007).

Marta-Pedroso et al. (2007) compare “in person” interviews with an Internet-based survey using the contingent valuation method to estimate willingness to pay for the preservation of the cereal steppe in Southern Portugal. They find the Internet-based survey respondents to be younger, better educated and reported higher incomes than the “in person” surveys. Contrary to the expectation given the demographic differences, however, they find that respondents surveyed through the Internet were more likely to state a lower willingness to pay than those interviewed in person. They conclude that Internet-based surveys are promising for contingent valuation but that further research is needed (Marta-Pedroso, Freitas et al. 2007).

Berrens et al. (2003) compare telephone surveys with Internet surveys that used panels of pre-selected and willing respondents in a contingent valuation study of the willingness to pay of the U.S population for ratification of the Kyoto protocol. They find the gender and mean age similar across modes. Respondents from the telephone survey are more educated. Contrary to the common finding that Internet users tend to have higher incomes, Berrens et al. (2003) find that the Internet panel respondents reported lower household income than either the telephone respondents or the general population.

The literature on other applications of internet surveys reveals similar findings. Seth et al. (in their undated and unpublished working paper from the UCLA Department of Political Science) find that while a nationwide internet panel appeared to be mildly-biased compared to an RDD telephone survey, the bias was a small tradeoff compared to the benefit of greatly reduced sample bias due to the large number of responses obtained using the internet survey. Schonlau et al. (2004) found mixed results when comparing an internet survey with an RDD survey – for certain factual questions, there was no difference in responses between the two survey types, but certain differences did occur for preference based questions. The authors find that a method known as propensity scoring is a promising way of improving the representativeness of internet surveys.

To date, we are unaware of a comparison of intercept surveys and internet surveys, but two southern California studies are underway (one by Chad Nelsen and another by David Loomis) and we should have comparative data on these approaches in the next year.

RESULTS

In this section we compare our data from the internet panel to US Census Bureau data to assess its representativeness, summarize our estimates of total annual trips, and offer insights into the likely magnitude of expenditures and economic value associates with private, shore-based visits to the Oregon coast by Oregon and some Washington residents.

We highlight several key findings detailed below:

1. Our data appear to well represent our target population with the exception of some female overrepresentation and Latino underrepresentation.
2. With the current sample size, we can use survey results combined with population U.S. Census data to estimate the annual visitation to the Oregon coast.
3. The data show that the vast majority of coastal trips are non-consumptive in nature.
4. About 73% of the KN ‘Knowledge Panel’ respondents who had an opportunity to take the survey completed the survey.

We also report on geospatial data collected through the internet panel and opt-in modes of data collection. These data are represented in Figures 5 – 11 and may also be viewed on the World Wide Web at Oregon MarineMap <http://oregon.marinemap.org/>.

Confidence in the Results

Throughout the report, we provide results that indicate what percentage of our respondents fall in certain categories. Our confidence in these results depends importantly on the size of our sample. Larger samples provide more confidence which can be expressed as a confidence interval. At the 95% confidence level, the confidence in our result can be given as X% \pm some percentage (e.g. the 95% confidence level could be 45% \pm 3%). The formula for determining the 95% confidence interval, for a percentage, \bar{p} , is

$$p = \bar{p} \pm 1.96s_{\bar{p}}, \text{ where } s_{\bar{p}} = \sqrt{\frac{\bar{p}(1 - \bar{p})}{n}}.$$

For this draft report, we do not estimate confidence intervals; however, we are extending our analysis to include confidence intervals in the final version of this work, after statistical analyses are completed.

Representativeness

We find that the ethnicity and gender of our respondents are roughly similar to 2006 projections by the US Census Bureau for the Oregon resident population and the counties in Washington surveyed. Our survey aims to be representative of the population of the counties we target. In practice, our data are well matched with Census findings, with two exceptions:

1. Females are overrepresented and,
2. Persons of Hispanic and Latino origin are underrepresented

No survey mode is perfectly representative (Rea and Parker 2005) and our online survey clearly gives too little weight to Hispanic responses. We are unsure of exactly why our survey under-represents Hispanic respondents. It is likely that Hispanic and Latino internet users do not engage in internet surveys at the same rate as other members of the population. In 2007, the Pew Internet and American Life Project reported that internet usage by Latinos was 56% while internet usage by non-Latinos was 71% (Fox and Livingston 2007). Internet usage among US born Latinos, however, is almost identical to that of non-Latinos. Another possible reason for the disparity in our respondents and US Census projections could be that the labels people use to self identify their race have changed (see Bates et al. 2006). US Census projections are based on self-identification labels chosen almost ten years prior and the degree of self-identification may have changed.

Table 4: Comparing internet panel demographic data to US Census data

	2009 Census (estimate)	Waves 1 and 2
Total completed responses	-	4,072
Female %	50	56
Male %	50	44
White, Non-Hispanic %	80	83
Black, Non-Hispanic %	2	1
Other, Non-Hispanic %	5	8
Hispanic %	11	5
2+ Races, Non-Hispanic %	3	3

Source: U.S. Census Bureau: State and County QuickFacts. Oregon.
<http://quickfacts.census.gov/qfd/states/41000.html>

Coastal visitation

Of 4,072 survey respondents (wave 1+2) about 80% indicated that they visited the Oregon coast at least once in the past 12 months. Respondents were also asked to state the number of coastal trips taken in the past 12 months and show the distribution of these coastal trips across a set of coastal regions that correspond to Oregon coastal counties (see Figure 1 above for a map of the coast with county boundaries). Respondents who had visited the coast in the past year report taking an average of about seven trips over the past year. The range was large, 1-365 trips, which is consistent with the fact that some respondents live at the coast while others travel some distance to reach coastal areas, from the Portland/Vancouver metro areas or Salem and Eugene. The distribution of trips at a coarse spatial scale reported by respondents is presented in Table 2 below. Counties in Table 2 correspond to coastal segments presented in Figure 1 above. Almost three-quarters of reported trips occurred in the three northernmost counties, Lincoln, Clatsop, and Tillamook.

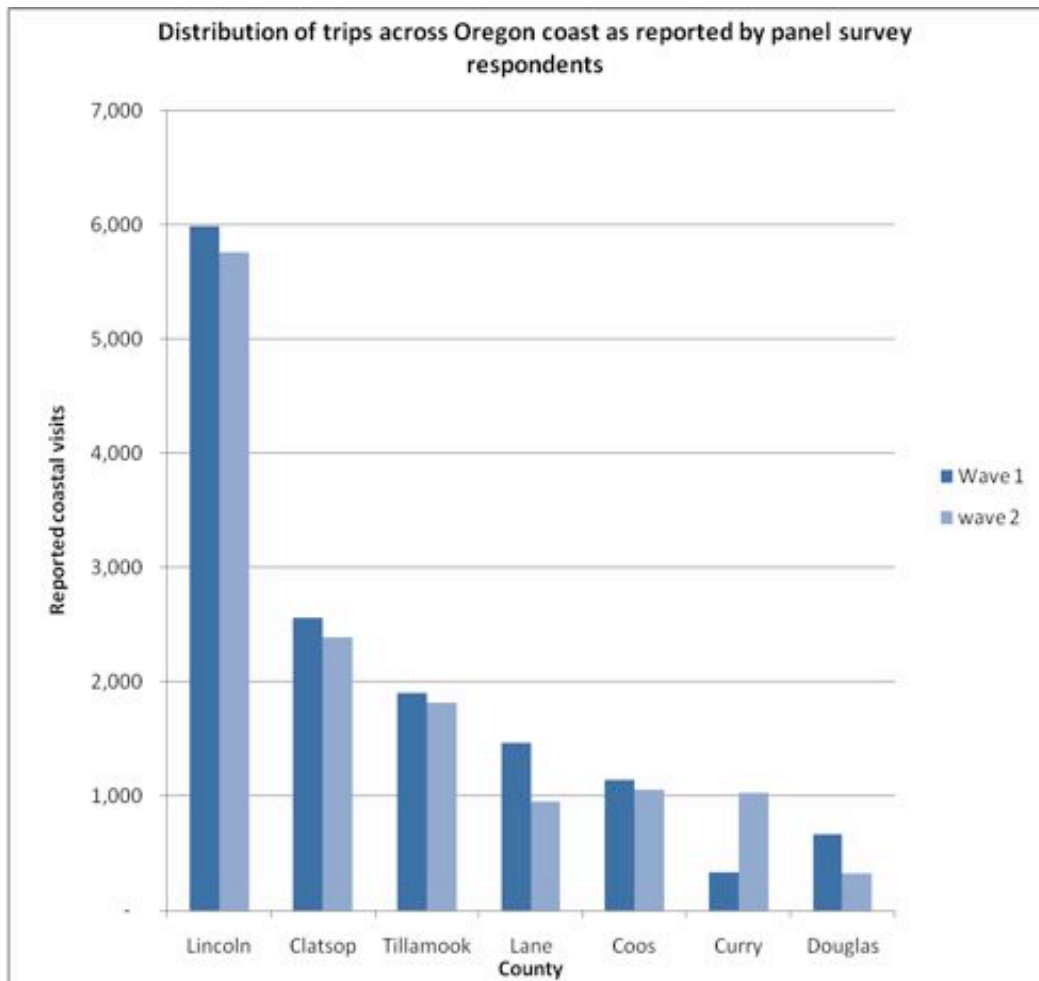
Table 5: Have you been to the Oregon coast at least once in the last 12 months?

	N	Yes	No
Total	3,999	3,208	791
Wave 1	2,019	1,632	387
Wave 2	1,980	1,576	404

Table 6: Distribution of coastal trips reported by panel survey respondents

OR county	Wave 1	Wave 2	W1+2	Percent
Lincoln	5,986	5,757	11,743	42.9%
Clatsop	2,558	2,393	4,951	18.1%
Tillamook	1,900	1,822	3,722	13.6%
Lane	1,469	956	2,425	8.9%
Coos	1,147	1,054	2,201	8.0%
Curry	331	1,026	1,357	5.0%
Douglas	667	327	994	3.6%
Totals	14,057	13,335	27,392	100.0%

Figure 2: Coastal visitation at a coarse spatial scale



Participation in coastal activities

Respondents were asked about participation in coastal activities in two ways: (i) activities practiced by the respondent during the past 12 months; and (ii) activities practiced during the most recent coastal trip.

Figure 3: Participation in coastal activities as a percent of all survey respondents: last 12 months

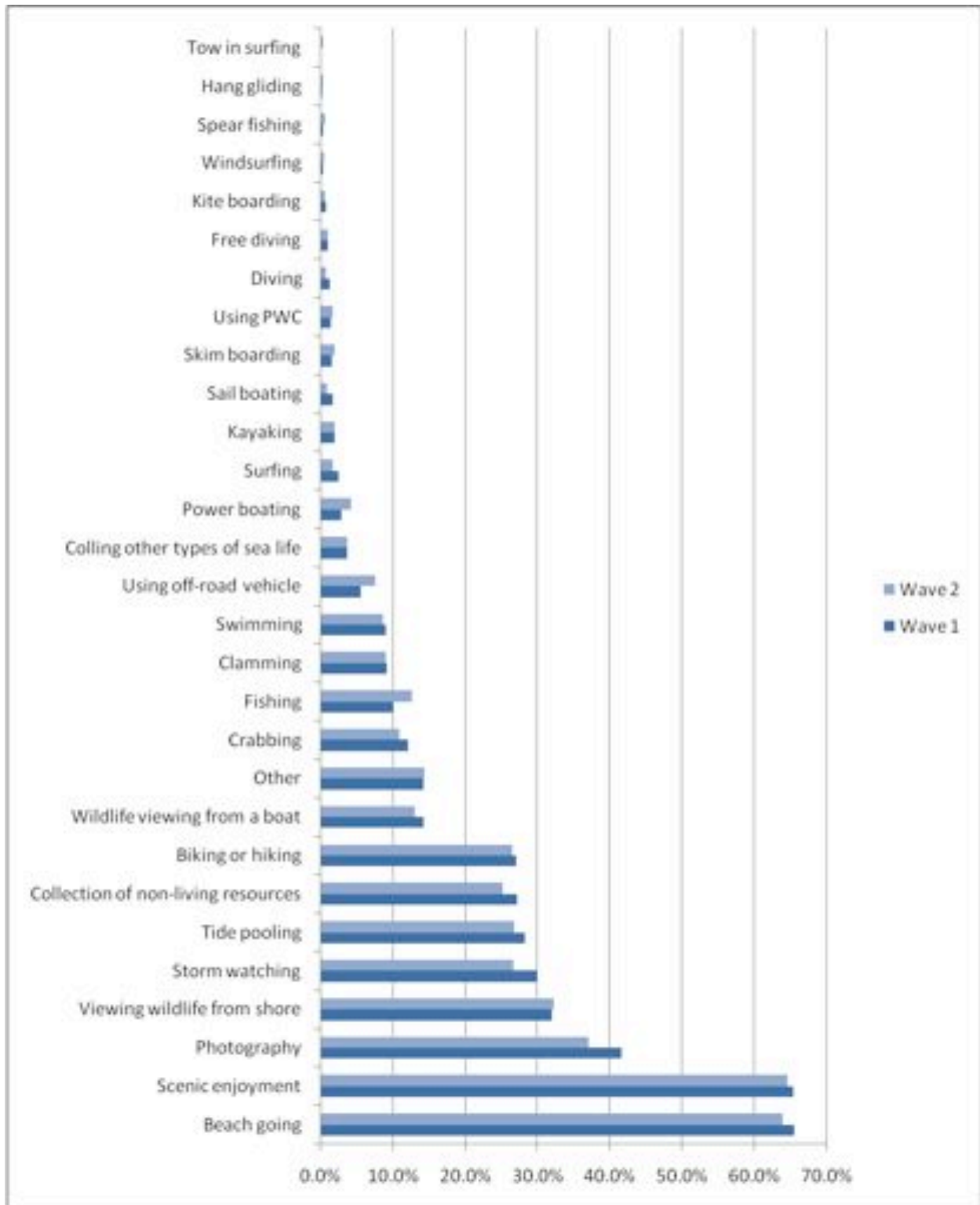
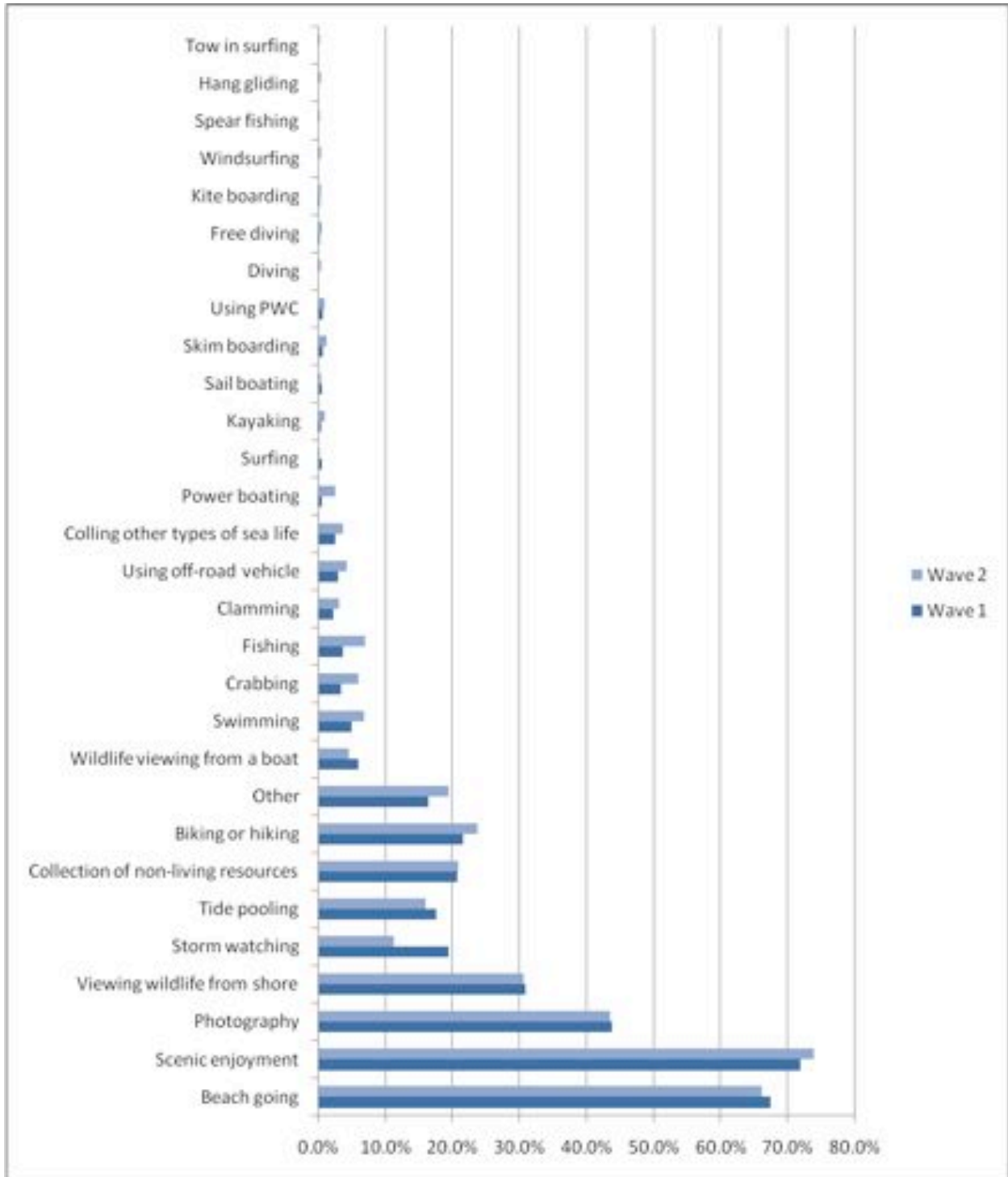


Figure 4: Participation in coastal activities as a percent of all survey respondents: last trip



Trip expenditures

The survey elicits data on last coastal trip expenditures, for respondents who indicated that they visited the coast at least once in the past year. We focused only on trip expenditures that would not have occurred if a respondent did not take a trip to the coast. Costs associated with use of durable goods, e.g. surfboards, fishing gear, and travel costs are not included in our cost estimates. Travel costs are not included but could be estimated using our sample, which includes data on average miles traveled, mode of transportation, and vehicle type used.

Table 7: Expenditures reported by panel survey respondents: average across entire sample

	Average expenditure per person	Standard error	95% confidence interval		observations
Lodging	30.39	1.86	26.74	34.03	1759
Food and beverages, restaurant, bar	19.79	1.08	17.67	21.90	1863
Food and beverages from a store	15.32	5.46	4.61	26.02	1866
Souvenirs	6.34	0.59	5.18	7.50	1753
Museum, aquarium, or other entrance fee	1.90	0.18	1.55	2.25	1741
Sundries	1.17	0.12	0.92	1.41	1737
Boat fuel	9.03	8.51	(7.65)	25.72	1734
Charter fee (whale watching, fishing, etc.)	1.36	0.36	0.66	2.06	1732
Car rental	0.23	0.08	0.08	0.39	1728
Boat rental	0.47	0.13	0.23	0.72	1733
Parking cost	0.51	0.16	0.20	0.83	1780
Bike rental	0.24	0.06	0.13	0.36	1727
Lessons, clinics, camps	0.12	0.04	0.04	0.20	1722
One-day fishing license fee	0.31	0.07	0.16	0.46	1730
Surfboard or bodyboard rental	0.08	0.03	0.03	0.14	1722
Kayak rental	0.11	0.05	0.00	0.22	1721
Ramp fees	0.31	0.16	0.00	0.62	1718
Dive equipment rental and airfills	0.02	0.01	(0.00)	0.04	1723
Hang glide rental	0.01	0.01	(0.01)	0.03	1733
TOTAL:	87.72				

Table 8: Expenditures reported by panel survey respondents: [given an expenditure on an item](#)

	Average expenditure per person	Standard error	95% confidence interval		observations
Lodging	86.92	3.79	79.48	94.35	777
Food and beverages, restaurant, bar	29.24	1.48	26.33	32.14	1,427
Food and beverages from a store	13.84	0.60	12.66	15.01	1,324
Souvenirs	22.73	1.23	20.31	25.15	549
Museum, aquarium, or other entrance fee	11.62	0.52	10.60	12.64	350
Sundries	8.49	0.71	7.09	9.90	266
Boat fuel	27.85	4.55	18.50	37.19	27
Charter fee (whale watching, fishing, etc.)	58.33	10.07	37.76	78.90	31
Car rental	57.93	14.79	27.16	88.69	22
Boat rental	22.84	5.78	10.78	34.90	21
Parking cost	3.36	0.38	2.62	4.11	219
Bike rental	21.44	3.49	14.30	28.57	31
Lessons, clinics, camps	22.80	6.94	8.01	37.58	16
One-day fishing license fee	13.66	1.73	10.17	17.15	45
Surfboard or bodyboard rental	32.63	10.51	9.94	55.33	14
Kayak rental	31.64	7.06	15.68	47.60	10
Ramp fees	4.98	1.34	2.24	7.73	28
Dive equipment rental and airfills	56.45	20.80	9.40	103.51	10
Hang glide rental	29.41	17.29	(18.60)	77.42	5

Extrapolating from Sample to Population: Simple Point Estimates

We use US Census data to estimate key aspects of private coastal use of the Oregon coast by extrapolating from our sample to the entire study population (sample frame). We provide basic point estimates that we derive by assuming that the proportion of survey respondents who undertake trips to the coast, practice recreational activities, and spend money is approximately representative of the entire study population. In general, we have a degree of confidence in these estimates that positively correlates with the size of the sample (i.e., we have greater confidence in larger samples). Even small samples, however, can be used to derive accurate extrapolations when the parameter in question is known to have a relatively small range of variability across a population, as can be indicated by a small standard deviation. Nonetheless, without a large sample it is difficult to estimate such variability.

We derive simple, linear extrapolation estimates by multiplying across rows one and two in Table 9.

Table 9: Estimated number of users, trips and direct expenditures

Percent visit the coast in last year	Total population: Oregon and Clark, Cowlitz, Pacific, Wahkiakum Counties (WA)	Estimate of total coastal users
80.24%	4,384,959	3,518,491
Average # annual trips (study pop)	Estimate of total coastal users	Estimate of total coastal trips
6.3	4,384,959	27,625,242
Average direct expenditure per trip	Estimate of total coastal trips	Total direct expenditures
\$87.72	27,625,241.70	\$2,423,286,201.92

These estimates suggest that about four million permanent residents take about 27 million individual trips annually and spend about \$2.4 billion (a conservative estimate that does not account for some portion of durable goods or travel costs).

It should be noted that the definition of “last trip” in our survey includes (i) single and multi-day trips, and (ii) trips that require traveling some distance (e.g., >10 miles). Additional insight could be gained by analyzing the data as a set of samples that are stratified according to coastal/non-coastal resident, single vs. multi-day trips, etc. We can also stratify our expenditure data according to where the expenditure occurred (within 30 miles of the coast or not). Finally, not all trips are “shore-based” and focused on recreational activities.

Table 10: Was recreation the primary reason for your trip to the coast or ocean?

	Wave 1	Wave 2	Total
Yes	1,570	1,543	3,113
Yes %	88%	88%	88%
No	211	212	423
No %	12%	12%	12%

Table 11: If not recreation, what was the primary reason for your trip to the coast or ocean?

	Wave 1	Wave 2	Total
Other	145	160	305
Other %	69%	76%	72%
Work	64	49	113
Work %	30%	23%	27%
School	2	2	4
School %	1%	1%	1%

To put estimated expenditures into context, it is noted that Oregon’s total GDP in 2008 was \$161.5 billion. Oregon’s total retail gross in 2008 is about \$8.7 billion. Source: [Bureau of Economic Analysis](#) (US dept. of commerce). Accommodation and food service sales in 2008 were about \$4.25 billion. Source: [Bureau of Economic Analysis](#) (US dept. of commerce)

We also use simple point extrapolations to estimate the number of individuals from the study population who participate in various coastal activities. Again, our level of confidence in these preliminary estimates declines with sample size. For example, we have the least (approaching zero) confidence in the extrapolation for tow-in surfing, for which the total sample (wave 1+2) is only three respondents. Conversely, we have reasonable confidence in estimates for activities that have a total sample that is greater than 500.

Table 12: Number of Trips Reported by Activity

	Wave 2	Wave 1	Wave 1+2 (total sample)	% total sample
Scenic enjoyment	1286	1270	2556	62.8%
Beach going	1203	1203	2406	59.1%
Photography	796	799	1595	39.2%
Wildlife viewing from shore	523	506	1029	25.3%
Biking or Hiking	449	451	900	22.1%
Collection of non-living resources	345	352	697	17.1%
Tide pooling	305	301	606	14.9%
Other	313	285	598	14.7%
Storm watching	170	346	516	12.7%
Swimming or body surfing	122	81	203	5.0%
Wildlife viewing from a boat	89	101	190	4.7%
Fishing	104	71	175	4.3%
Crabbing	90	69	159	3.9%
Using off-road vehicle	61	44	105	2.6%
Collecting other types of sea life	53	42	95	2.3%
Clamming	49	36	85	2.1%
Surfing	36	17	53	1.3%
Power boating	26	13	39	1.0%
Skim boarding	23	12	35	0.9%
Kayaking	20	11	31	0.8%
PWC	11	8	19	0.5%
Kite boarding	6	8	14	0.3%
Free diving/snorkeling	7	4	11	0.3%
SCUBA diving	5	4	9	0.2%
Sail boating	6	3	9	0.2%
Windsurfing	5	3	8	0.2%
Hang-gliding/parasailing	3	4	7	0.2%
Spear fishing or diving for abalone	3	3	6	0.1%
Surfing (tow-in)	2	1	3	0.1%

The Economic Impact of Coastal Visitors

Coastal activities contribute to local economies in two ways: coastal activities generate economic impact and economic value. Economic impact reflects the movement of money through an economy. For instance, coastal recreational opportunities bring people to coastal areas and these people spend money locally on parking, food, lodging, and rentals, among other things. For local coastal communities, these expenditures support local businesses and jobs. In the context of marine spatial planning, these expenditures are directly comparable to ex-vessel revenues from commercial and gross revenues from commercial passenger fishing activities – two measures of economic activity often used in MPA analysis. (Neither the expenditures presented here nor raw estimates of ex-vessel and gross revenue for CPFV include multiplier effects.)

Like all gross revenues and other measures of economic impact, gross expenditures by coastal visitors are not a direct indicator of economic value. Economic value represents how much value is created by an activity, beyond what it costs to provide that activity. At a minimum, the costs of doing business should be subtracted from gross revenues in order to better understand the net market value of recreation-based expenditures. This corresponds directly to estimates of net revenues for commercial fishing (sometimes called economic value). An even more thorough analysis would recognize that gross expenditures also do not account for the public costs associated with providing coastal opportunities. These costs include the opportunity costs of public lands set aside for coastal access, and also the operation and maintenance costs of public access sites.

One important component of economic value is how much a coastal visitor would pay to visit an access site, beyond what it actually costs them – a quantity known as consumer surplus. This consumer surplus represents the net value of an activity to a consumer in addition to the net value that accrues to local businesses. All recreational activities, whether consumptive or non-consumptive, generate consumer surplus values. Charter vessel recreation generates consumer surplus value for passengers and commercial fishing generates consumer surplus for those who buy and consume commercially caught seafood.

The concept of consumer surplus is particularly important when considering coastal recreational activity because the coast is generally available to the public for little or no cost beyond the cost of transportation and possibly parking. As a result, coastal recreation, especially shore-based recreation is often undervalued in coastal management decisions.

Geospatial Data

Geospatial data collected through the internet panel and opt-in modes of data collection are summarized below for four activity groups: Ocean (human powered activities); Wildlife Viewing; Boating; Shore (Figures 5 - 11). These data may also be viewed on the World Wide Web at Oregon MarineMap: <http://oregon.marinemap.org/>.

Figure 5: Panel Last Trip Data: Ocean Group

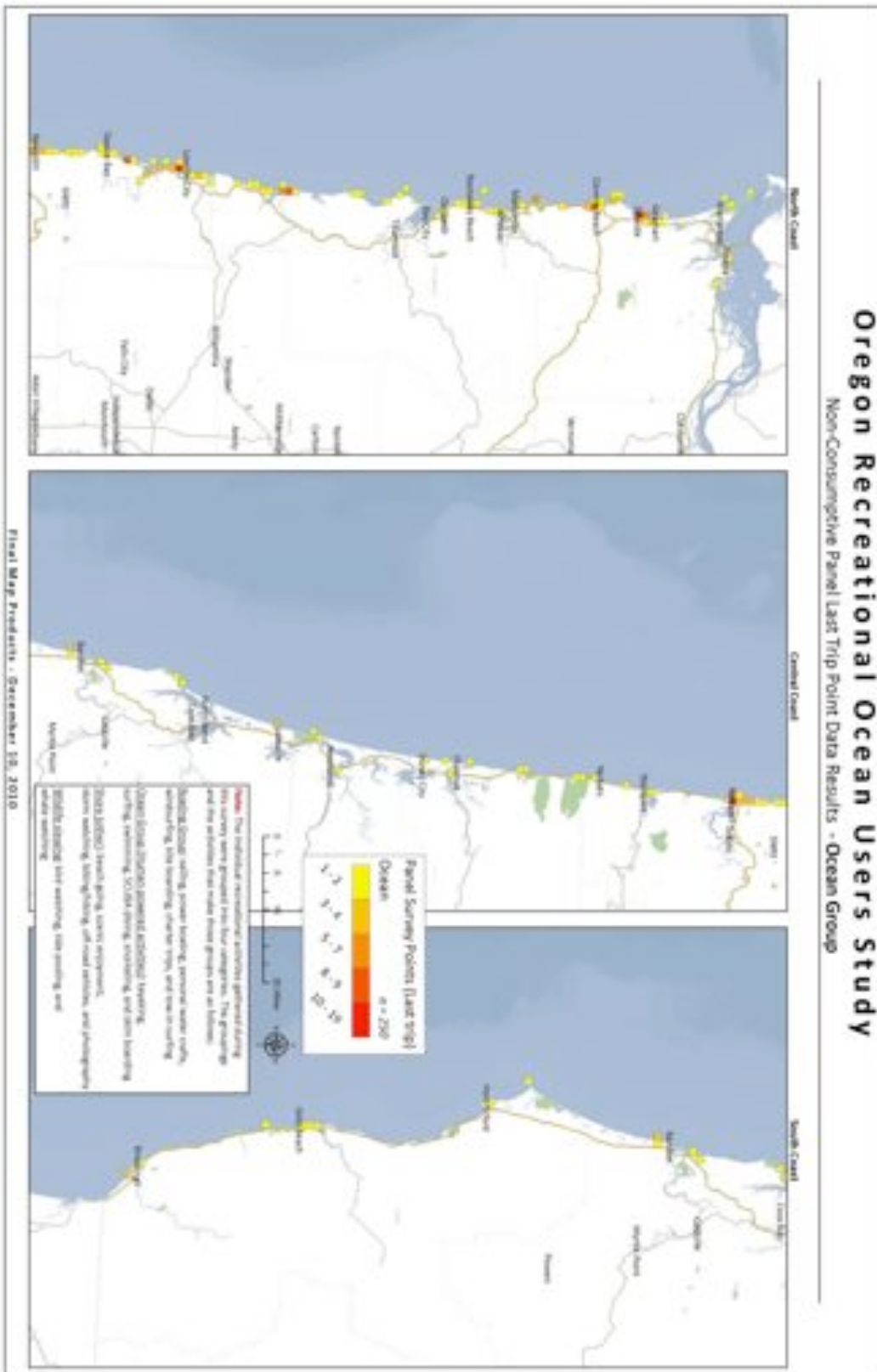


Figure 10: Opt-in Cumulative Data: Wildlife Viewing Group

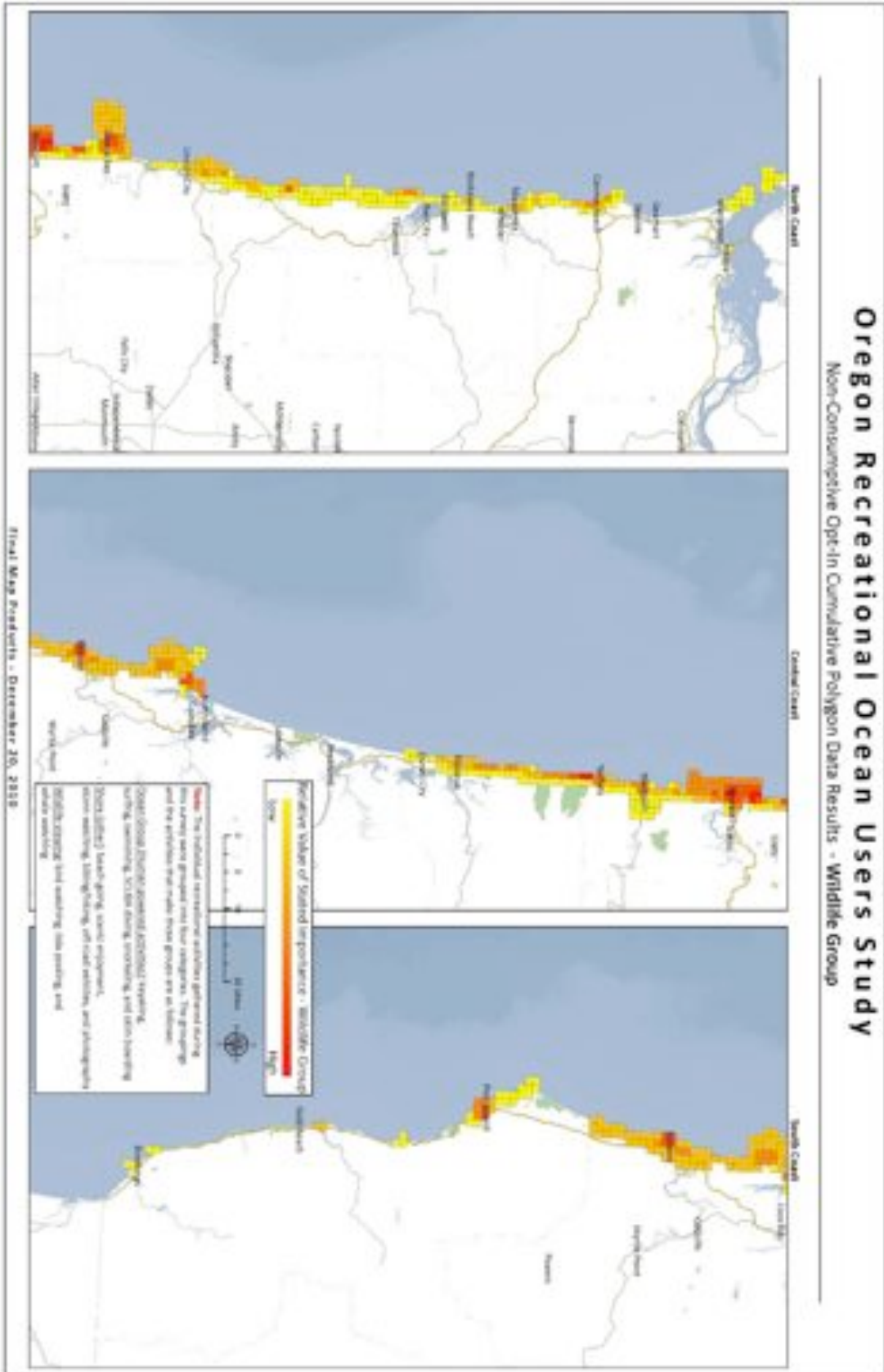
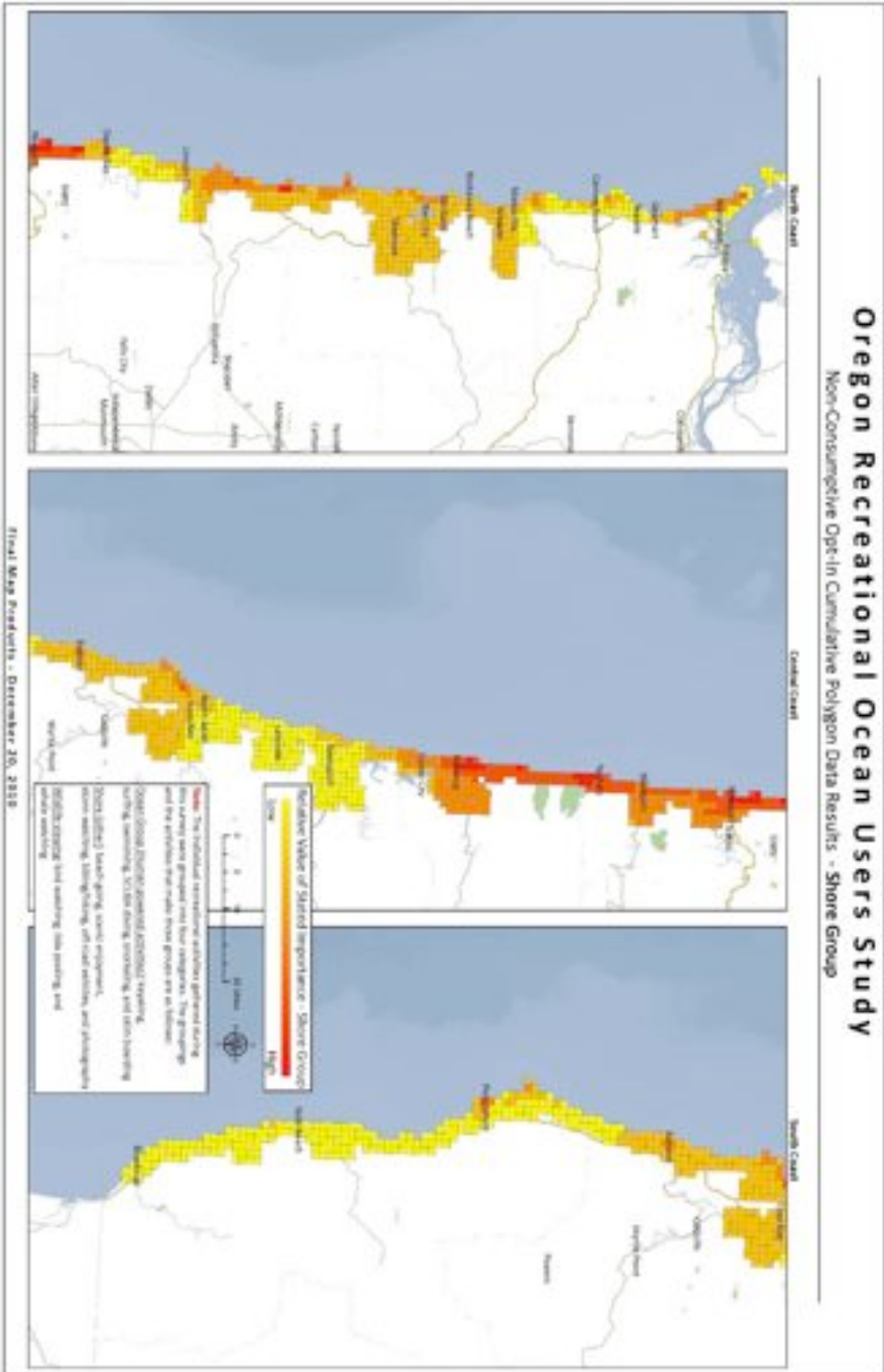


Figure 11: Opt-in Cumulative Data: Shore Group



WHAT HAS BEEN ACCOMPLISHED AND WHAT CAN BE DEVELOPED FURTHER

This study collected spatially-explicit information on non-consumptive ocean recreation in Oregon using a cost-effective, internet-based tool. This data set provides a baseline of geospatial, economic, and demographic information that may be used to inform Oregon's current and future ocean planning efforts.

The study also included a strong public outreach and participatory component to engage recreational stakeholders in providing information. This has helped build awareness among non-consumptive recreational users of Oregon's efforts to update its Territorial Sea Plan. As the process moves forward in 2011, it will be important to continue to engage stakeholders and members of the public in planning efforts.

Geospatial data from this study has been integrated by Ecotrust staff into Oregon MarineMap: <http://oregon.marinemap.org/>, a decision support tool for ocean planning in Oregon. Non-consumptive geospatial information is now available for analysis and collaborative sharing with participants in the Territorial Sea Plan process. We anticipate that this information will help the state of Oregon to minimize potential future impacts to non-consumptive recreational uses and values.

Economic data collected through this study is being used to inform the Oregon Shoreside Economic Analysis being conducted by Ecotrust. The study is addressing the research question: What is the value and economic contribution of marine resources to the coastal economy of Oregon and its coastal communities?

Finally, results from this study will be shared with ODFW staff and community teams engaged in implementing Oregon's marine reserve program. As referenced earlier, information on non-consumptive recreational use has been identified as an important science need for informing marine reserve management in Oregon. Accordingly, data from this study may be useful in establishing baselines for socioeconomic monitoring.

We believe that the approach used for this study is a cost-effective way to collect quantitative, spatially-explicit data on the frequency and nature of private, shore-based coastal activities and the expenditures associated with these activities.

In particular, we count several benefits of using an online survey instrument with an internet panel.

1. It provides an estimate of overall private coastal use (quantity of trips to the coast), by use type and by coastal access site.
2. It provides an estimate of the demographic character of coastal visitors.
3. It collects data on highly dispersed and difficult to measure coastal uses including casual wildlife viewing, birding, beach going, private kayaking and diving.
4. Data collection is easy to replicate and spatially scalable.
5. Results are statistically comparable over time.
6. It costs less than comparable RDD phone and certainly much less than an intercept (in-person) survey approach.
7. It covers a large area of visitor residency and use.
8. The data from it can be used to estimate economic impacts to coastal communities and random utility models can be applied to the data to estimate the non-market value of coastal use. Both

analyses have particular relevance to learning about how changes in the marine and coastal environment affect human well-being.

We also count several general limitations of the internet panel approach:

1. It currently under-represents Hispanic shore-based coastal visitors, but it is difficult to determine by how much. We expect this problem to become less severe as internet survey taking becomes more prevalent by Hispanic internet users.
2. The estimates for activities at infrequently visited sites have lower statistical precision than for frequently visited sites. Further expansion should focus on highly populated or frequently visited stretches of coast.
3. It does not capture information about visitors from other states (aside from the Washington counties included).

REFERENCES

- Bates, N., Martin, E., DeMaio, T, and M. de la Puente. (2006). Questionnaire Effects on Measurements of Race and Spanish Origin. Statistical Research Division, U.S. Census Bureau.
- Berrens, R. P., A. K. Bohara, et al. (2003). "The Advent of Internet Surveys for Political Research: A Comparison of Telephone and Internet Samples." *Political Analysis* 11(1): 1-22.
- Chapman, D. J. and W. M. Hanneman (2001). Environmental Damages In Court: The American Trader Case. *The Law and Economics of the Environment*. A. Heyes: 319-367.
- Couper, M. P. (2000). "Web Surveys: A Review of Issues and Approaches." *The Public*
- Couper, M. P. (2007). Kapteyn, A. Schonlau, M. and J. Winter. "Non-coverage and non-response in an Internet survey." *Social Science Research*, 36: 131-148.
- Curtin, R., S. Presser and E. Singer. (2005). "Changes in Telephone Survey Nonresponse over the Past Quarter Century." *Public Opinion Quarterly* 69 (1): 87-98.
- Fleming, C. M. and M. Bowden (2007). "Web-based surveys as an alternative to traditional mail methods." *Environmental Management* 90: 284-292.
- Fox, S. and G. Livingston. (2007). Hispanics with lower levels of education and English proficiency remain largely disconnected from the internet. Pew Hispanic Center And Pew Internet Project. Washington, D.C.
- LaFranchi, C.L. and M. Tamanaha. (2005). Spatial Patterns of Non-consumptive use on the California Central Coast. Report prepared for the Marine Life Protection Act Initiative, the Monterey Bay National Marine Sanctuary Foundation, and the Monterey Bay National Marine Sanctuary.
- Manfreda, K. (2001). Web Survey Errors. Ph.D. dissertation, University of Ljubljana.
- Marta-Pedroso, C., H. Freitas, et al. (2007). "Testing for the survey mode effect on contingent valuation data quality: A case study of web based versus in-person interviews." *Ecological Economics* 62(388-398).
- Nelsen, C., L. Pendleton, et al. (2007). "A Socioeconomic Study of Surfers at Trestles Beach." *Shore & Beach* 75(4): 32-37.
- Pendleton, L and J. Kildow. (2006). "The Non-Market Value of California's Beaches", *Shore and Beach* (Journal of the American Shore and Beach Preservation Association), v. 74, n. 2, Spring 2006, pp. 34-37.
- Pendleton, L. (2008). The Economic Value of Coastal and Estuary Recreation in *The Economic and Market Value of America's Coasts and Estuaries: What's at Stake*, Coastal Ocean Values Press, L. Pendleton, editor
- Pendleton, L. King, P. Mohn, C., Webster, D.G. and R. Vaughn. (2009). Estimating the Potential Economic Impacts of Climate Change on Southern California Beaches (funded by the California Energy Commission).
- Rea, L.M. and R. Parker. (2005). *Designing and Conducting Survey Research: A comprehensive guide*. Jossey-Bass, A Wiley Imprint, San Francisco.
- Rudd, M.A. (2006). Non-use economic values of aquatic species at risk in Canada: preliminary results. Bedford Institute of Oceanography, Dartmouth, May 06

ATTACHMENTS

Attachment 1: 'Frequently Asked Questions' Outreach Document

Oregon Non-Consumptive Recreational Use Study

Frequently Asked Questions

Who is conducting this study?

Surfrider Foundation is conducting the study in partnership with Ecotrust, Natural Equity, and the state of Oregon.

Why is this study being conducted?

For the first time in history, a number of new uses are being proposed for Oregon's Territorial Sea. The most obvious one is wave energy development, but other uses, such as wind energy and aquaculture, may be on the horizon as well. This study will provide information to help the State identify locations for renewable energy projects that will reduce potential impacts to non-consumptive recreational users.

How will the information being used?

Information collected will be used to inform a *comprehensive plan* for the Oregon Territorial Sea, which will identify potential locations for renewable ocean energy development (e.g., wave energy projects). Spatial data on ocean recreation will help decision-makers minimize impacts to these important uses.

Why should I participate?

Ocean recreation is important to the state of Oregon. Activities such as surfing, boating, kayaking, wildlife viewing, etc. provide many economic and sociocultural benefits. In order for ocean recreation to be adequately considered in ocean planning (e.g., siting of wave energy projects), the State needs information on what activities people engage in and where. By participating in this project, you will be helping to "paint a picture" of ocean use in Oregon that can be used to inform planning for Oregon's Territorial Sea.

Will you "out" my favorite surfing (or kayak, etc.) spot?

No, information collected on different activities will be combined or aggregated to prepare general maps of recreational use on the Oregon coast. Decision-makers will then be able to use this information in the ocean planning process. The information will not be posted on recreational user websites or shared with travel guides etc.

Why is Oregon creating an Ocean Plan for its Territorial Sea?

Oregon is creating a comprehensive plan (or map) to identify possible locations for wave energy projects. The idea is to find sites that will meet the needs of the wave energy project and also have little or no impact to the nearshore ecosystem and existing uses like fishing, surfing, and boating. By providing this information to the federal government, the State is hoping to provide a voice for coastal communities and ocean users like us.

How is the study being funded?

This study is being funded by the Packard Foundation as part of a public-private partnership with the state of Oregon to address science gaps for management of Oregon's Territorial Sea.

Oregon Coast and Marine Usage survey - Pretest
January 2010
- Questionnaire -

[DISPLAY]

We are conducting a survey of non-consumptive coastal recreation in Oregon, that is, activities enjoyed on the coast without taking anything out of the ocean or from the beach.

We will be asking you questions in categories related to:

- Coastal activities and participation levels
- Your last trip to the Oregon coast
- Costs related to your last trip
- Charter activities
- **[IF XPANEL=2 OR 3]** Who you are

Your responses are anonymous and will help us understand how people use and enjoy the Oregon coast.

[SP]

Q1. Have you been to the Oregon coast at least once in the last 12 months?

Yes 1
No 2

[PROGRAMMER NOTE:

IF Q1=2 AND XPANEL=1, TERMINATE.

IF Q1=2 AND XPANEL=2 OR 3, GO TO GENDER.]

[SP]

These questions are about your visits to the Oregon coast in the last year.

Q2. Please estimate how many visits you've made to the Oregon beach or coast in the last 12 months.

1	1
2	2
3	3
4	4
5	6
6-12	7
More than once a month (13-49 visits).....	8
Once a week (50 visits / year)	9
More than once a week (50+).....	10

[MP; SHOW IN 2 COLUMNS]

Q3. We are interested in knowing what you do when you go to the coast. For each of these activities, please indicate if you've participated in that activity during the last year (choose all that apply).

- a. Beach going
- b. Biking or Hiking
- c. Clamming
- d. Collecting/harvesting other types of sea life (seaweed, etc.)
- e. Collection of non-living resources/beachcombing (agates, fossils, driftwood)
- f. Fishing/Crabbing (from pier/from boat)
- g. Free diving/snorkeling (from shore, from boat)
- h. Hang gliding/parasailing
- i. Hook and line fishing (from shore/from boat)
- j. Kayaking in the ocean or estuary/slough
- k. Kite boarding or windsurfing
- l. Photography
- m. Power boating
- n. Sail boating
- o. Scenic enjoyment
- p. SCUBA diving (from shore, from boat)
- q. Skim boarding
- r. Spear fishing (from shore/from boat)
- s. Storm watching

- t. Surfing (body, board, boogie, stand up paddle)
- u. Surfing (tow-in)
- v. Swimming in the ocean
- w. Tide pooling
- x. Using off-road vehicle/driving on beach
- y. Using a personal water craft (PWC)
- z. Watching birds and/or other marine life from shore
- aa. Watching whales and/or other marine life from a boat (private or non-commercial boat)
- bb. Other, please list: [TEXTBOX]

[PROGRAMMER NOTE: CORRESPONDS TO Q9 IN CLIENT QUEx]

Q4. Please share with us the locations you visited on the Oregon coast during the last 12 months. For each of the coastal areas on the map below, please indicate how many times you visited each of these coastal areas in the last 12 months. If you did not visit a particular coastal area, please choose 'zero'.

- i. HERE WE HAVE A MAP OF OUR STUDY AREA THAT INCLUDES THE MAJOR REGIONS OF THE OREGON COAST. WE SHOULD HAVE NO MORE THAN seven MAJOR REGIONS and for each region the respondent should be prompted to tell us how many trips they made to that last region. We are currently considering either the same regions OPRD used in the Ocean Shore Rec Use Study or region boundaries that match Oregon coastal county boundaries. The selection of sites is best don through a drop-down list.

- ii. **The regions are on the attached file. (coastal counties)**

[PROGRAMMER NOTE: The client would like respondents to see a calendar that allows respondents to select the date.]

Q5. The following questions relate specifically to your last trip to the Oregon coast.

When did you last visit one of the coastal areas on the map above? Your best estimate is fine.

Date:

[SP]

Q6. On your last trip, did you start your trip from your home?

Yes 1
No 2

[IF Q6=2]

[TEXTBOX]

Q7. Where did you start from?

[DROP-DOWN, HOURS(0 to12) & MINUTES (:00 to :45)]

Q8. How long one way did it take (one way) to get to your destination?

Hours:

Minutes:

[SP]

Q9a. Did you stop at any other places along the coast on your way to or from your destination?

Yes 1
No 2

[IF Q9a=1]

[TEXTBOX]

Q9b. Please let us know the places where you stopped on your way to or from you destination.

[MP]

Q10. What mode(s) of transportation did you use to get to the coast?

- Bus 1
- Bike 2
- Walked 3
- Drove personal car 4
- Drove a rented car 5
- Rode with someone else –
 carpooled 6
- Other, please specify: [TEXTBOX] 7

[IF Q10=4 OR 5]

Q11. How would you describe the car that you used to get to the coast?

- Compact car, small sedan or light
 pick-up truck 1
- Large Sedan 2
- Wagon 3
- Mini-van 4
- Cross-over 5
- Sport utility vehicle 6
- Standard pickup truck 7
- Hybrid sedan 8
- Other, please specify: [TEXTBOX] 9

[DROP-DOWN, 0-100]

[PROMPT ONCE]

Q12. Approximately how many people (not including yourself) went on that trip?

[IF Q12>0, GET Q13]

[DROP-DOWN, 0-100]

Q13. Please estimate how many of these people (not including yourself) permanently reside in Oregon or Washington.

[DROP-DOWN, 24 ONE HOUR INCREMENTS]

Q14. Approximately, what time did you leave [If Q6=1 insert "home"; if Q6=2, insert Q7 text] to go to your destination?

[MP]

Q15. Did you participate in any of the following activities while you were at your destination?

1. Beach going
2. Biking or Hiking
3. Clamming
4. Collecting/harvesting other types of sea life (seaweed, etc.)
5. Collection of non-living resources/beachcombing (agates, fossils, driftwood)
6. Crabbing (from pier/from boat)
7. Free diving/snorkeling (from shore, from boat)
8. Hang gliding/parasailing
9. Hook and line fishing (from shore/from boat)
10. Kayaking in the ocean or estuary/slough
11. Kite boarding or windsurfing
12. Photography
13. Power boating
14. Sail boating
15. Scenic enjoyment
16. SCUBA diving (from shore, from boat)
17. Skim boarding
18. Spear fishing (from shore/from boat)
19. Storm watching

- 20. Surfing (body, board, boogie, stand up paddle)
- 21. Surfing (tow-in)
- 22. Swimming in the ocean
- 23. Tide pooling
- 24. Using off-road vehicle/driving on beach
- 25. Using a personal water craft (PWC)
- 26. Watching birds and/or other marine life from shore
- 27. Watching whales and/or other marine life from a boat (private or non-commercial boat)
- 28. Other, please list: **[TEXTBOX]**

[PROGRAMMER NOTE: CORRESPONDS TO Q19 IN CLIENT QUEX]

Q16. Based on the activities you participated in during your last visit to the coast, we now would like for you to indicate where these activities took place. Please use the map to show us where you last visited the coast and the activities. You'll be prompted to either draw an area or a point as to where you participated in the activity. For the purpose of this survey we are only asking you to map non-consumptive recreational activities. Those activities that you identified in the previous question are now populated on the left-hand side of the map and it will now prompt you to specify on the map where these activities occurred one-by-one.

[SP]

Q17. Did you spend the night somewhere other than your home as part of your last visit to your destination?

Yes 1
 No 2

[If Q17=1]

[TEXTBOX]

Q18a. In what city did you spend the night?

[If Q17=1]

[DROP DOWN BOX, RANGE: 1-5, 5+]

Q18b. How many nights did you spend during your last trip to your destination?

[SP]

[DROP-DOWN, SHOW HOURS IN 1-HOUR INCREMENTS: "12 AM" to "11 PM"]

Q19. About what time did you leave your destination?

[NUMBER BOX, 1-10000]

Q20. For your last trip, please give us your best estimate of the total amount you and your party spent (rounded to the nearest dollar).

_____ Dollars

[GRID, SP]

Q21a. During your last trip, please indicate if your party spent on the following items.

Yes	No
-----	----

- a. Parking
- b. Food and beverages from a store
- c. Food and beverages at a restaurant or bar
- d. Souvenirs (t-shirts, posters, gifts, etc.)
- e. Sundries (sunscreen, surf wax, motion sickness pills, batteries, film and processing etc.)
- f. Boat rental
- g. Car rental
- h. Dive equipment rental and airfills
- i. Kayak rental
- j. Surfboard or bodyboard rental
- k. Bike rental
- l. Boat fuel
- m. Ramp fees
- n. Lodging (if you stayed overnight)
- o. Charter fee (whale watching, etc.)
- p. Museum, aquarium, or other entrance fee

[SHOW Q21b for all selected in Q21a]

[GRID, NUMBER BOXES]

Q21b. During your last trip, please estimate how much your party spent on the following items.

Expense item	Cost: [NUMBER BOX, RANGE 0- 10000]	# of people covered [NUMBER BOX, LOWER LIMIT IS 1 AND UPPER LIMIT OF
--------------	---	--

		RANGE SET TO Q12 VALUE]
Parking		
Food and beverages from a store		
Food and beverages at a restaurant or bar		
Souvenirs (t-shirts, posters, gifts, etc.)		
Sundries (sunscreen, surf wax, motion sickness pills, batteries, film and processing etc.)		
Boat rental		
Car rental		
Dive equipment rental and airfills		
Kayak rental		
Surfboard or bodyboard rental		
Bike rental		
Boat fuel		
Ramp fees		
Lodging (if you stayed overnight)		
Charter fee (whale watching, etc.)		
Museum, aquarium, or other entrance fee		

[SP]

Q22. Please estimate the number of miles driven during your last trip to the coast (roundtrip).

0-5	1
6-10	2
11-20	3
21-40	4
41-60	5

61-80	6
81-100	7
100-150	8
150-200	9
200-250	10
250+	11

[MP]

Q23. Some people go to the coast to take a trip on a charter vessel. During the last 12 months, have you done any of the following activities from a charter in Oregon?

- a. SCUBA diving, free diving, or snorkeling from a charter commercial dive boat
- b. Watching whales and/or other marine life from a charter or commercial boat
- c. Fishing or crabbing

[PROGRAMMER NOTE: CORRESPONDS TO Q25B IN CLIENT QUEx]

[MP]

[If ANY CHECKED IN Q23 ASK Q23b]

Q23b. Did you go on a charter or open party boat from a port at any of the harbors? (Choose all that apply from the list below.)

Oregon coast harbors: (Include a static map with harbors visible to select)

- a. Astoria
- b. Bandon
- c. Brookings
- d. Charleston
- e. Depoe Bay
- f. Florence
- g. Garibaldi
- h. Gold Beach
- i. Pacific City
- j. Port Orford
- k. Newport
- l. Warrenton/Hammond
- m. Winchester Bay

[PROGRAMMER NOTE: CORRESPONDS TO Q25C IN CLIENT QUEx]

[SP]

[SHOW ONLY SELECTED HARBORS FROM Q23B]

Q23c. Of these harbors which harbor did you take your last charter or open party boat trip from?
(Choose only one that applies from the list below.)

Oregon coast harbors: (Include a static map with harbors visible to select)

- a. Astoria
- b. Bandon
- c. Brookings
- d. Charleston
- e. Depoe Bay
- f. Florence
- g. Garibaldi
- h. Gold Beach
- i. Pacific City
- j. Port Orford
- k. Newport
- l. Warrenton/Hammond
- m. Winchester Bay

[SP]

Q24. On your last charter trip from **[INSERT Q23C SELECTION]**, which of the following was the trip's primary activity?

- a. Scuba diving
- b. Whale and wildlife watching
- c. Fishing or crabbing
- d. Other, please list: **[TEXTBOX]**

[PROGRAMMER NOTE: The client would like respondents to see a calendar that allows respondents to select the date.]

Q25. On what date did your last charter or party boat trip take place?

[GRID, SP]

Q26a. During your last trip, please indicate if your party spent money on the following items.

Yes	No
-----	----

- a. Parking
- b. Food and beverages from a store
- c. Food and beverages at a restaurant or bar
- d. Souvenirs (t-shirts, posters, gifts, etc.)
- e. Sundries (sunscreen, surf wax, motion sickness pills, batteries, film and processing etc.)
- f. Boat rental
- g. Car rental
- h. Dive equipment rental and airfills
- i. Kayak rental
- j. Surfboard or bodyboard rental
- k. Bike rental
- l. Boat fuel
- m. Ramp fees
- n. Lodging (if you stayed overnight)
- o. Charter fee (whale watching, etc.)
- p. Museum, aquarium, or other entrance fee

[SHOW Q26b for all selected in Q26a]

[GRID, NUMBER BOXES]

Q26b. For each of the following items, please tell us how much you think your party spent on the following items.

Expense item	Cost: [NUMBER BOX, RANGE 0-	# of people covered [NUMBER BOX,
--------------	--------------------------------------	---

	10000]	LOWER LIMIT IS 1 AND UPPER LIMIT OF RANGE SET TO 500]
Parking		
Food and beverages from a store		
Food and beverages at a restaurant or bar		
Souvenirs (t-shirts, posters, gifts, etc.)		
Sundries (sunscreen, surf wax, motion sickness pills, batteries, film and processing etc.)		
Boat rental		
Car rental		
Dive equipment rental and airfills		
Kayak rental		
Surfboard or bodyboard rental		
Bike rental		
Boat fuel		
Ramp fees		
Lodging (if you stayed overnight)		
Charter fee (whale watching, etc.)		
Museum, aquarium, or other entrance fee		

[PROGRAMMER NOTE: IF XPANEL=1, SKIP TO ENDDISPLAY]

[PPGENDER]

GENDER

[SP]

We have just a few more questions for you. Please keep in mind that your answers are confidential and your personal information will also be kept private.

What is your gender?

- Male 1
- Female 2

[PPAGE]

QDOB

[NUMBER BOXES – RANGE 1 TO 12; 1 TO 31; 1900 TO (CURRENT YEAR-1)]

Please enter your date of birth.

[SPACE]

Here is an example of how to enter in a date: if you were born on August 23, 1954, you would enter the number 8 for month, 23 for day, and 1954 for year.

YYYY

MM

DD

[PPETHM]

The questions for race/ethnicity vary slightly from Panel version as the Panel is adjusting to match census. Currently the categories are collapsed back down to those asked here.

QRACE1

[SP]

This is about Hispanic ethnicity. Are you of Spanish, Hispanic, or Latino descent?

- No, I am not 1
- Yes, Mexican, Mexican-American,
Chicano 2
- Yes, Puerto Rican 3
- Yes, Cuban 4
- Yes, Central American 5
- Yes, South American 6
- Yes, Caribbean 7
- Yes, Other
Spanish/Hispanic/Latino 8

[TEXT ONLY]

Please indicate what you consider your racial background to be. We greatly appreciate your effort to describe your background using the standard categories provided. These race categories may not fully describe you, but they do match those used by the Census Bureau. It helps us compare our survey respondents to the U.S. population.

QRACE2
[MP]

Please check one or more categories below to indicate what race(s) you consider yourself to be.

- White 1
- Black or African American 2
- American Indian or Alaska Native 3
- Asian/Pacific Islander 4

Create Data-only variable PPETHM by using the below logic involving responses to QRACE1 and QRACE2

Variable name: PPETHM

Type: SP

Variable Text: Census Ethnicity demographic

Response list:

1. White, Non-Hispanic
2. Black, Non-Hispanic
3. Other, Non-Hispanic
4. Hispanic
5. 2+ Races, Non-Hispanic

QRACE1	QRACE2	PPETHM
1	1 (ONLY)	1
1	2 (ONLY)	2
1	3 OR 4	3
1	1 AND 2 OR	5
	1 AND 3 OR	
	1 AND 4 OR	
	2 AND 3 OR	
	2 AND 4 OR	
	3 AND 4	
2 OR 3 OR 4 OR 5 OR 6 OR 7 OR 8	1 OR 2 OR 3 OR 4 (ANYTHING)	4

[PPEDUC]

[PPEDUCAT]

QEDUC

[SP]

What is the highest level of school you have completed?

No formal education.....	1
1 st , 2 nd , 3 rd , or 4 th grade	2
5 th or 6 th grade	3
7 th or 8 th grade.....	4
9 th grade.....	5
10 th grade.....	6
11 th grade.....	7
12 th grade NO DIPLOMA	8
HIGH SCHOOL GRADUATE – high school DIPLOMA or the equivalent (GED).....	9
Some college, no degree	10
Associate degree	11
Bachelor’s degree	12
Master’s degree	13
Professional or Doctorate degree	14

Variable name: PPEDUCAT

Type: SP

Variable Text: Education - categorical

Response list:

1. Less than HS
2. HS
3. Some college
4. Bachelor or higher

QEDUC	PPEDUCAT
1-8	1
9	2
10-11	3
12-14	4

[PPINCIMP]

QINCINTRO

The next question is about the total income of YOUR HOUSEHOLD for the PAST 12 MONTHS. Please include your income PLUS the income of all members living in your

household (including cohabiting partners and armed forces members living at home). Please count income BEFORE TAXES and from all sources (such as wages, salaries, tips, net income from a business, interest, dividends, child support, alimony, and Social Security, public assistance, pensions, or retirement benefits).

**QINC
[SP]**

Was your total HOUSEHOLD income in the past 12 months...

Below \$35,000	1
\$35,000 or more.....	2
Don't know	3

**QINC2
BASE: QINC=1
[SP]**

We would like to get a more accurate estimate of your total HOUSEHOLD income in the past 12 months before taxes. Was it...

Less than \$5,000	1
\$5,000 to \$7,499	2
\$7,500 to \$9,999	3
\$10,000 to \$12,499	4
\$12,500 to \$14,999	5
\$15,000 to \$19,999	6
\$20,000 to \$24,999	7
\$25,000 to \$29,999	8
\$30,000 to \$34,999	9

**QINC3
BASE: QINC=2
[SP]**

We would like to get a more accurate estimate of your total HOUSEHOLD income in the past 12 months before taxes. Was it...

\$35,000 to \$39,999	1
\$40,000 to \$49,999	2
\$50,000 to \$59,999	3
\$60,000 to \$74,999	4
\$75,000 to \$84,999	5
\$85,000 to \$99,999	6
\$100,000 to \$124,999	7
\$125,000 to \$149,999	8
\$150,000 to \$174,999	9
\$175,000 or more.....	10

Variable name: PPINCIMP

Type: SP

Variable Text: HH income – profile and imputed

Response list:

1. Less than \$5,000
2. \$5,000 to \$7,499
3. \$7,500 to \$9,999
4. \$10,000 to \$12,499
5. \$12,500 to \$14,999
6. \$15,000 to \$19,999
7. \$20,000 to \$24,999
8. \$25,000 to \$29,999
9. \$30,000 to \$34,999
10. \$35,000 to \$39,999
11. \$40,000 to \$49,999
12. \$50,000 to \$59,999
13. \$60,000 to \$74,999
14. \$75,000 to \$84,999
15. \$85,000 to \$99,999
16. \$100,000 to \$124,999
17. \$125,000 to \$149,999
18. \$150,000 to \$174,999
19. \$175,000 or more

QINC2	QINC3	PPINCIMP
1		1
2		2
3		3
4		4
5		5

6		6
7		7
8		8
9		9
	1	10
	2	11
	3	12
	4	13
	5	14
	6	15
	7	16
	8	17
	9	18
	10	19

[PPMARIT]

QMARIT

[SP]

Are you now married, widowed, divorced, separated, never married, or living with a partner?

- Married 1
- Widowed 2
- Divorced 3
- Separated 4
- Never married 5
- Living with partner 6

[PPHHHEAD]

QHEAD

[SP]

Is your residence in . . .

- Your name only 1
- Your name with someone else's name (jointly owned or rented) 2
- Someone else's name only 3

Variable name: PPHHHEAD

Type: SP

Variable Text: Household head

Numeric range: 0-1 or 99

QHEAD	PPHHHEAD
1-2	1
3	0

[PPHHSIZE]

QSIZE

[NUM; RANGE 1-15; DO NOT ALLOW DECIMALS]

Including yourself, how many people currently live in your household at least 50% of the time?

[SPACE]

Please remember to include babies or small children, include unrelated individuals (such as roommates), and also include those now away traveling or in a hospital.

[PPT0 1]

[PPT2 5]

[PPT6 12]

[PPT13 17]

[PPT18OV]

Note this question does not appear in the Core profile. For panel members it is collected as part of recruitment.

QAGEGROUP

[NUMERIC GRID; RANGE 0-15; DO NOT ALLOW DECIMALS]

How many members are there in each age group in your household?

- 1 year old or younger (0-12 months old)
- 2 to 5 years old
- 6 to 9 years old
- 10 to 12 years old
- 13 to 17 years old
- 18 years old or older

[PPWORK]

QWORK

[SP]

Which statement best describes your current employment status?

- Working – as a paid employee..... 1
- Working – self-employed 2
- [SPACE]**
- Not working – on temporary layoff from a job 3

Not working – looking for work.....	4
[SPACE]	
Not working – retired	5
Not working – disabled.....	6
Not working – other	7

[PPRENT]
QOWN
[SP]

Are your living quarters. . .

Owned or being bought by you or someone in your household	1
Rented for cash	2
Occupied without payment of cash rent	3

[PPHOUSE]
QHOUSE
[SP]

Which best describes the building where you live?

A one-family house detached from any other house.....	1
A one-family house attached to one or more houses	2
A building with 2 or more apartments	3
A mobile home	4
Boat, RV, van, etc.	5

[PPNET]
QINTER
[SP]

Do you have internet access in your home?

No	0
Yes.....	1

[PPSTATEN]
[PPREG4]
QSTATE
[DROP DOWN LIST OF ALL STATES + WASHINGTON DC]

In which state do you live?

ME.....	11
NH.....	12
VT.....	13
MA.....	14
RI.....	15
CT.....	16
NY.....	21
NJ.....	22
PA.....	23
OH.....	31
IN.....	32
IL.....	33
MI.....	34
WI.....	35
MN.....	41
IA.....	42
MO.....	43
ND.....	44
SD.....	45
NE.....	46
KS.....	47
DE.....	51
MD.....	52
DC.....	53
VA.....	54
WV.....	55
NC.....	56
SC.....	57
GA.....	58
FL.....	59
KY.....	61
TN.....	62
AL.....	63
MS.....	64
AR.....	71
LA.....	72
OK.....	73
TX.....	74
MT.....	81
ID.....	82
WY.....	83
CO.....	84
NM.....	85
AZ.....	86
UT.....	87
NV.....	88
WA.....	91
OR.....	92
CA.....	93
AK.....	94
HI.....	95

Variable name: PPREG4

Type: SP

Variable Text: Region 4 – based on State of residence

Response list:

1. Northeast
2. Midwest
3. South
4. West

PPSTATEN	PPREG4
11-23	1
31-47	2
51-74	3
81-95	4

[PPMSACAT]

QMETRO

[SP]

Do you live in a metro or non-metro area?

- Non-Metro (Rural) 1
- Suburban 2
- Urban 3

Variable name: PPMSACAT

Type: SP

Variable Text: MSA Status

Numeric range: 0-1 or 99

QMETRO	PPMSACAT
1	0
2-3	1

[NUMBER BOX, SPACE FOR 5 DIGITS]

QZIP. What is the zip code of your place of residence?

[ENDDISPLAY]

Thank you so much for participating in our survey. We appreciate your help and input!

[KN CLOSE]