



Cooperative Party Charter Phone Survey Newsletter

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How operators can improve the Survey

Participation and response is the Key

The main purpose of any survey is to accurately represent what is going on. The PCPS randomly selects vessels to report trip rates and to observe catch rates. When some vessels do not participate in the survey or fail to respond when selected, then we cannot be certain that the responding vessels are representative. When we can select randomly from all the vessels in the fleet, then, on average, we will get a representative cross section of the fleet and the estimates will be 'unbiased'. However, if some vessel operators do not participate then there is potential of getting information that is not representative. Estimates based on such data could be 'biased'.

Vessel operators can improve the survey by participating and responding when selected to report their trips. Since the PCPS selection process is random each week, each vessel has an equal chance of being selected every week. Also, it is just as important to report when you have NOT taken trips, as it is to report any number of trips. Another way vessel operators can improve the survey is by allowing observers on their vessels. When some vessels do not participate in the observer program, there is some uncertainty about how well species catch rates are represented. In a nutshell, we get the most accurate results when all vessels participate and always respond when selected for a sample of their activity. Call **888-274-7838** to get onboard with the PCPS survey. 🐟

PCPS on the Gulf and Atlantic Coasts

Testing of this method began back East

The PCPS survey running on the other coasts of the United States is becoming a vital source of information on party and charter (PC) boats for the states. Because most East Coast and Gulf States have not had recreational angler licenses or logbook systems, it was difficult to get an accurate picture of total fishing effort. Total PC angler trips are about equally divided between the Pacific, Atlantic and Gulf regions with about 1.3 million each per year in each region (Figure 1).

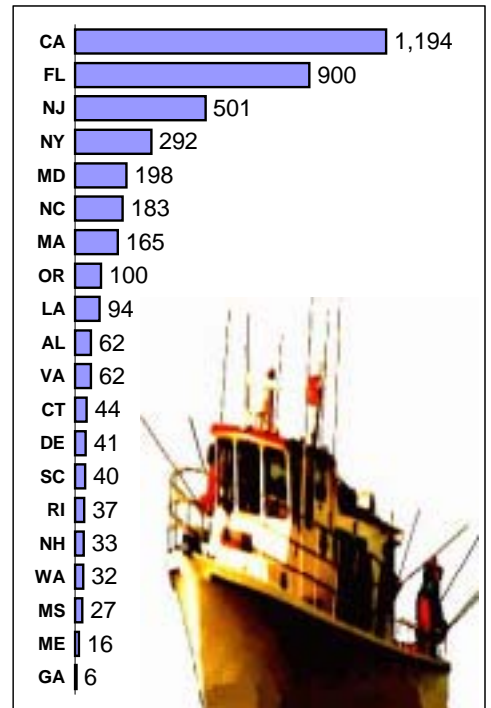


Figure 1 Distribution of party and charter boat angler trips by state in thousands (California has 1.194 million).



The National Marine Fisheries Service developed and has been testing the PCPS method in many states. The PCPS has been implemented in Louisiana, Mississippi, Alabama and Florida. Texas has compiled a charter boat vessel directory, which will enable the state to implement the telephone survey in Texas. South Carolina has run through its pilot study, which is comparing the MRFSS traditional random phone survey, PCPS, and mandatory logbook methodologies. Results should be available soon and will appear in a future newsletter.

The three methods that were compared in South Carolina for estimating total trips were conducted simultaneously so that the results could be compared. This comparison will be used to determine the best method for estimating effort in the charter boat fishery on the Atlantic Coast. RecFIN and the National Marine Fisheries Service (NMFS) are conducting a similar study in California to compare the traditional MRFSS, PCPS, and mandatory logbook methodologies.

NMFS has recently required PC vessels fishing for bluefish on the Atlantic to be specifically permitted and submit logbooks on all fish caught. California is already ahead of the Atlantic states when it comes to licensing, permitting and data collection. Other states that are doing PC data research include Maine, New Hampshire and Maryland.

How the estimates are Calculated

Estimating trips and total Catch

Estimating PCPS Trips

Estimates of total angler trips are calculated from the fishing trips reported by participants in the PCPS. The list of eligible and active vessels for a particular two-month period is also used in the estimation. The first step is to compute the average number of boat trips and anglers per boat for each week of data. For example, we might have called ten boats about one particular week. On that

PCPS OBJECTIVES

- More efficient data collection methods
- More reliable fishing effort estimates and therefore better catch statistics
- Better public understanding of survey methods
- More accurate statistics for fisheries management
- Closer association between government agencies and the user-groups

week each example boat took an average of four trips with an average six anglers on each trip. The actual number of trips taken by each of the ten example boats might have been 0,5,8,0,6,8,7,2,4,0 (total=40, so 40 trips divided by 10 boats equals an average of 4 trips per week.

$$40 \text{ trips} / 10 \text{ boats} = 4 \text{ trips per boat}$$

A similar computation is done to get average anglers per trip.

The next step in estimating trips is to calculate the number of angler trips by multiplying the average number of trips times the average number of anglers times the number of active boats. Let's assume that there were an average of 6 anglers per boat for this example. (4 trips per week x 6 anglers per trip x 210 boats = 5040 angler trips.

$$4 \text{ trips} \times 6 \text{ anglers} \times 210 \text{ boats} = 5040 \text{ anglers}$$

The final step for trips would be to adjust the angler trips based on encounters with boats not in the survey. If boats were encountered by observers that were not on the list of eligible-active boats, then an adjustment is made to account for the number of anglers on boats that were not listed. For example, if we observed 20 boats and one was not on our list, there would be an adjustment. If the number of anglers on the unlisted boat were large, then the adjustment would in-

crease. So, if there were any anglers on the boats that were unlisted, then the adjustment will increase the total number of angler trips.

$$\text{Adjustment factor} = \frac{\# \text{ anglers on all trips}}{\# \text{ anglers on listed trips}}$$

So if we saw one unlisted boat with 20 anglers and the 19 listed boats had 190 anglers then we would increase our angler estimate by about 11% to 5600 angler trips. 210 anglers on all trips / 190 anglers on listed trips = an 11% increase.

$$5040 \text{ anglers} \times 1.11 = 5600 \text{ angler trips}$$

Estimating PCPS Catch

Estimates of catch are calculated based on the above trip estimate and the average number of fish per angler. The average number of fish per angler is determined by observing a random selection of trips and counting the number of fish and anglers. For example, if we observed ten vessels and found these numbers of albacore 0,6,10,0,0,30,0,4,0,0 = 50 and on the same trips we counted a total of 100 anglers. We would then calculate the catch rate at 50 divided by 100 = 0.5 (one-half) albacore per angler trip.

$$50 \text{ fish} / 100 \text{ anglers} = \frac{1}{2} \text{ fish per angler}$$

The final step would be to multiply the catch rate by the angler trip estimate to get an estimate of catch numbers.

$$\frac{1}{2} \text{ fish per angler} \times 5600 \text{ anglers} = 2800 \text{ fish}$$

When we were observing the albacore catch numbers we also took length measurements and weights (when possible) and calculated an average weight (simplified example) of 20 pounds. We then calculate the catch in pounds.

$$20 \text{ pound fish} \times 2800 \text{ fish} = 56,000 \text{ pounds}$$

When the estimates are calculated the averages are computed for a two-month period for Southern California and Northern California and for areas outside and inside of 3 miles from shore. The weekly trip estimates are added together for a two-month period. In May-June 2001 in Southern California we counted 87 albacore caught by 186 anglers with

an average length of 659mm and average weight of 13.8 pounds. Using the preliminary PCPS estimate of 92,000 trips outside of 3 miles (where the albacore were caught) we calculate an estimate of 43,000 albacore weighing 270 metric tons.

Please contact the following individuals if you have any questions, suggestions or concerns regarding the PCPS estimates:

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Tom Sminkey, NMFS, F/ST1, Room 12362, 1315 East-West Highway, Silver Spring, MD 20910, 301-713-2328

More characteristics of the Fleet

Pattern of the fleet being Sampled

Each marine county in California has a number of vessels that operate as party and charter boats. Each of these boats is licensed to carry a limited number of anglers. It might be expected that the total angler capacity (sum of the angler carrying limits for each vessel) would be proportional to the number of people in that area. That is, the more people living in the area, the more anglers and the greater the need for capacity on boats.

Not too surprising is that the distribution of angler capacity is close to the distribution of the human population (Figure 2). Los Angeles County has a greater percentage of coastal population than party charter vessel capacity. We could presume that a lower percentage of that population fishes. However, San Diego County has a larger percentage of the fleet than human population. It seems that this would indicate that a portion of the population in Los Angeles County and perhaps from other areas fishes in San Diego. Conversely, it may be that more people who reside in San Diego County fish on party and charter boats than in the other counties in California.

In a future issue we could look at the distribution of angler residence for local fleets to see if we can nail down these presumptions one way or the other.

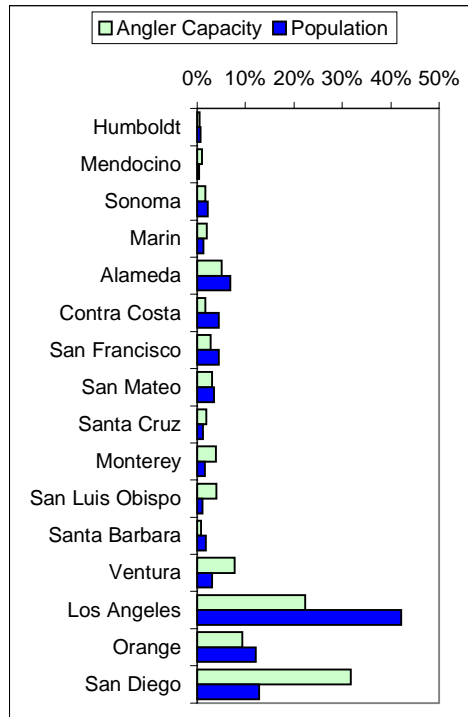


Figure 2. Vessels carrying capacity and population percentages by county from north to south in California.

More economic Results

Expenditures of vessels being Sampled

The purpose of the economic questions is to obtain the information needed to estimate the economic value of fish and other marine resources to the party charter fleet and evaluate the economic impact of present and future management decisions on the fisheries.

In California, one trip from among the weekly trips of each sampled vessel is profiled with economic data about that trip. Since the day of the week and the vessel is chosen at random, the collected data is expected to be representative of all the vessels.

The responses to the economic survey can be summarized in many ways. One of the expenses of vessel operations is bait. Figure 3 shows the relationship between bait cost per passenger (angler day) and fish catch per angler. It might be expected that increased consumption of bait would result in higher catch rates on average. However, this is not always the case.

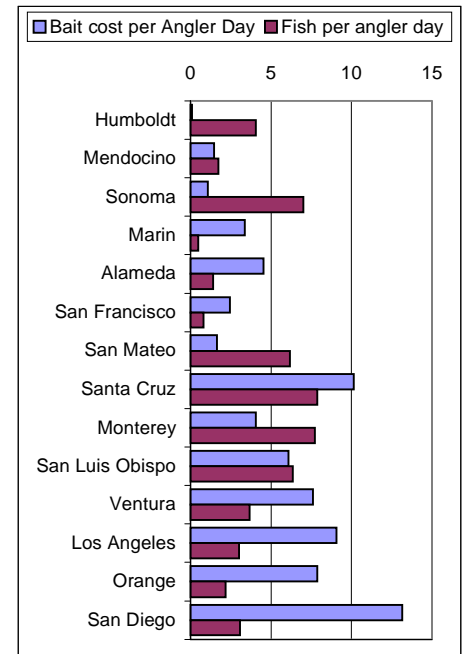


Figure 3. Bait cost and number of fish per angler day by California County from north to south.

It appears that in some areas, less is expended on bait to get about the same number of fish. In Southern California, large amounts of money are spent on bait relative to the catch rate. Some areas have sport fisheries that are more dependant on using a lot of bait. Some fisheries, such as tuna, use a quantity of the bait for chumming. Other sport fisheries, such as salmon, may use little or no bait. If this analysis took into account the size or weight of the fish in the catch, the results might look different.

Please contact the following individuals if you have any questions, suggestions or concerns regarding the add-on economic survey (ending June, 2002):

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How frequently vessels have been Contacted

*By chance, some vessels are selected
more frequently than Others*

Ten percent of the vessels are selected
each week at random. The sampling is
always done with the replacement of the
already selected vessels from previous
weeks. This is done to insure complete
randomness within any particular week.
There is a chance that some vessels
would never be selected or be selected
more frequently than the average of
about five times per year.

Figure 4 shows the expected and actual
distribution of vessel selections made
over the past 11 months. Vessels were
selected less frequently than predicted
because a number of vessels were re-
moved from the survey. Removed ves-
sels were those that were determined to
be ineligible for the survey. At the be-
ginning of the survey, eligibility was

determined after selection since we were
unable to contact all vessels before we
started the survey.

You may be selected more than once in a
two month period or even in back to
back weeks. You have the greatest prob-
ability of being selected about five times
each year. You may not be selected at all
for long periods of time and then be se-

lected two or
three times in a
two-month pe-
riod of time.
Selection may
seem either
clumped or
evenly distrib-
uted over two-
month selection
periods. Selec-
tions may also
be together or
weeks apart
within any two
month period.

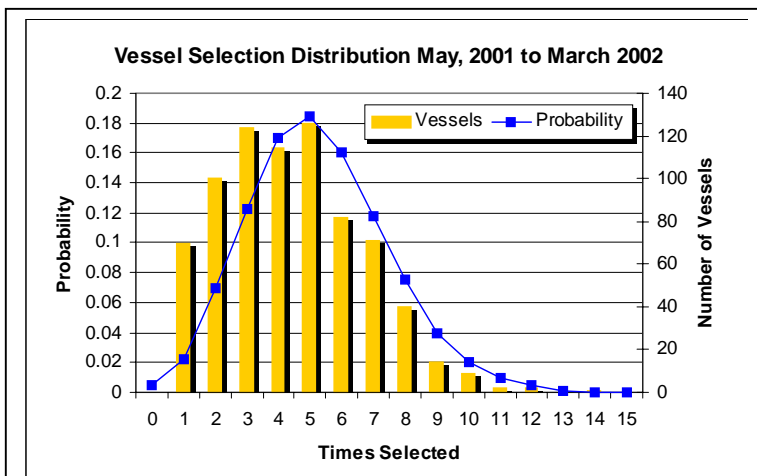


Figure 4. Actual vessel selections in the PCPS and the mathematical probability of vessel selection.



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