

Supplement BL2001 – 2001 On-board Boat Location (latte)

Introduction

MRFSS samplers may ride the party or charter boats (Commercial Passenger Fishing Vessels – CPFV's) in order to interview anglers. Since we will be asking location of fishing (Supplement FL2001) in 2001 and we may ride the party boats, there is an opportunity to collect detailed information about all locations fished. The data collected is a substitute for the location of majority of harvest collected in the normal 2001 MRFSS interview. California has participated in this study since 1999.

Since most commercial passenger fishing vessels (CPFV's or party and charter boats) maintain an array of electronics on-board, we have the ability to collect information such as bottom depth, exact geographic coordinates and surface temperature with the captain's permission. We may also carry onboard our own GPS receiver and use with the captain's permission. We also have the chance to collect species composition and pinniped interaction for each stop the boat makes.

On-board Boat Location

Each “stop” the boat makes where the anglers are allowed to drop their lines into the water can be a separate fishing location. When the boat is not anchored and the anglers drop their lines, the location is termed a “drift” if the engine(s) (running or not) are not engaged into gear to provide power. As the boat drifts along anglers continue to fish the “drift” and cover an area over the bottom dependent on currents and wind. Once the anglers are told by the captain or crew to pull up their lines the “drift” ends when all anglers have their gear out of the water.

Sometimes the boat will reposition or “station” over a productive fishing location. In this case, the anglers may or may not pull up their gear and the boat may be under power (gears engaged) in order to maintain or slowly move into a favorable location. In these cases, only one location need be applied to the fishing, even if the anglers needed to pull in their lines temporarily while the boat moved (usually relatively slowly) back into position. Often this “re-location” event is announced to the passengers in advance.

Since a fishing location may be a drift or troll with starting and ending points, two locations need to be recorded, one for when the anglers put their “lines down” and a second for when they pull their “lines up”. Each starting and ending location will have a set of geographic coordinates and a time (in 24-hour format) in order to map the extent of travel over the bottom and calculate direction and average speed. If the drift was only a very short distance and time (less than three minutes or 300 feet) then the ending location geographic

coordinates need not be recorded. However, the ending time should always be recorded so that catch per unit of effort can be calculated.

Often the captain will be “prospecting” for fish when he asks the anglers to drop their lines into the water because there is some evidence of fish on the electronics. This may result in very short unproductive stops. Record these locations since all fishing time will be used in the calculation of catch per unit of effort. There is biological interest in locations where fish are unavailable or not cacheable.

On-board Pinniped Observations

For each fishing location, the interviewer will be checking for angler interactions with seals or sea lions. The interviewer will observe the presence of seals or sea lions, keep a tally of lost bait, sportfish and gear for each location, and record when the boat leaves the location due to the presence of seals or sea lions. The interviewer may need to work with the captain or crew to determine the reason for leaving the location when pinnipeds are present.

Species for Fishing Locations

For each fishing location the interviewer will be keeping a tally of species caught and kept or returned for that location. The tally need not be a count of all angler catches since it is often difficult to be everywhere on the boat at once. The interviewer may approximate the number of fish caught, but must record the number of anglers being observed for catch kept or returned at a location. For returned fish the number will be an approximate number most frequently.

When the catch rates are very high, the interviewer may find it necessary to monitor fewer anglers for the catch tally. It is acceptable to monitor different numbers of anglers at each location, however the preference is to monitor the same number of anglers throughout the trip. When observing fewer than the total anglers on the boat, the interviewer should vary the group of anglers by position on the boat and by composition of individual anglers. This is required so that the sample you take is random with respect to the position on the boat (stern vs. bow) and the skill of the anglers.

Conduct of this Study

This study is similar in some ways to previous studies carried out by CDFG's Central California Marine Sport Fish Project in Monterey (Reilly, P. N. et. al. Onboard Sampling of the Rockfish and Lingcod Commercial Passenger Fishing Vessel Industry in Northern and Central California [vars. eds. 1987-1995]). These on-board studies go a step beyond traditional access point surveys like the MRFSS by going with anglers on their fishing trips. There are two additional forms used in this study.

Biased Sampling Conduct

Many potential biases are avoided by going with the angler while some new potential biases are created. Problems with bad reporting and recall of data by the anglers is avoided but the behavior of the anglers and crew may be altered by the presence of the sampler. For example, the sampler may be perceived as an enforcement officer when dressed in a uniform. Some difficulties arise in the design of questionnaires, coding forms and sampling procedures as the number of anglers in the group increases beyond a reasonable number which can be monitored by one interviewer.

In other studies, interviewers have worked to sample a subset of anglers on the boat at random. This becomes harder with an increase in the number of anglers and their mobility on the fishing platform. With current traditional bottom fishing trips on boats with up to about 30 anglers, the anglers do not move about the platform much. In surface fisheries, such as tuna trips and on large boats with many more anglers, the mobility of individual anglers increases greatly. If an inexperienced interviewer decides to save effort by sampling a subset of immobile anglers in one area of the boat, for example, the results would be statistically unsound due to improper sample selection. Contact your supervisor if there is any question about how to collect fish tallies from fewer than the total number of anglers on the boat.

Use of the Two Forms

There are two forms used in this study, one for the location and one for the species tallies. Information from the top of each form will be used to link the data together with the MRFSS angler interviews and creel census. There are two sets of item by item instructions for the forms.

Item by Item Instructions – 2001 On-Board Boat Location (yellow)

In this case, the item by item instructions have no item numbers printed on the form. The order followed will be sections with element numbers for reference. The location form is in two main sections, assignment data and location records:

- 1) Assignment data (top of form)
- 2) Trip location data (rows in remainder of form)

Assignment Data

There are 11 assignment data items, which are used both to link the data to the regular MRFSS interviews and to provide some unique information about the CPFV trip. The name of the boat and landing should be clearly printed for data entry. All of these items are required to be completed for the form to be acceptable.

Item 1 Assignment - This is the same as Item 1 on the MRFSS Form.

Item 2 Interviewer Code - This is the same as Item 2 on the MRFSS Form.

Item 3 Boat # – CDFG registered number of the boat.

Item 4 Date - This is the same as Item 3 on the MRFSS Form (YYYYMMDD).

Item 5 Sampler - Interviewers full name.

Item 6 Boat Name – Name of the boat.

Item 7 Eligible Anglers on Boat – Number of anglers who would qualify for an MRFSS interview. This excludes working crewmembers (commercial fishermen) and passengers who did not intend to fish.

Item 8 FIPS County Code - This is the same as Item 7 on the MRFSS Form.

Item 9 Site Code - This is the same as Item 8 on the MRFSS Form.

Item 10 County -Name of the County in above item.

Item 11 Landing -Name of the charter office or “landing” who booked the trip.

Trip Location Data

There are 19 items for each location record. There are 23 location records on one form. Each fishing stop (with “lines down”) will have a location record completed. Not all of the items are required at each stop. Some items may be coded with all nines (i.e. “99” or “999” etc.) for “_____” or with nines with a trailing eight (i.e. “98” or “998” etc.) for “_____”.

If additional records are required use a second form writing “1st of 2” on the first form and “2nd of 2” on the second form. The assignment data must be the same on both forms. Renumber the location records along the left side of the second form starting at “14”.

Unknown Items

The only items that you can have “refused” or “don’t know” are probably due to access problems to the boat electronics, unless you carry electronics with you on the boat. The possible refused items are:

- latitude and longitude coordinates with GFormat
- bottom depth & temperature

The other items are dependant on the interviewer monitoring activity on the boat and may not be refused. It is expected that the interviewer will rarely be unable to collect the remaining information for an on-board fishing location. In cases where the interviewer is unable to determine interviewer dependent information the item(s) may be coded as “don’t know” and explained somewhere on the form or on the weekly report.

The location data records are in three sections with the data types clustered:

1. **Coordinate Data** – latitude, longitude, geographic format and time
2. **Name and Physical Data** – site name, fishing type, depth, temperature and number of observed anglers.

3. **Pinniped Data** – seals or sea lions present, fish lost, gear lost and moved boat

Coordinate Data – Item 1 through Item 7

Time		Latitude		Longitude		BDepth ft.		Obs Angs		Seal		Moved boat	
1		S	3	1	5					<input type="checkbox"/>			
2		E	4	1	6						gear		lost
									Temp F		lost		lost
Site Name									Ftype		lost		lost

7 GFormat

Coordinate Data

Item 1 Start Time -This is “lines down” time. Record the time in 24-hour format when fishing started at a new location.

Item 2 End Time - This is “lines up” time. Record the time in 24-hour format when fishing ended for this location, troll or drift.

Item 3 Start Latitude – North latitude, or loran in one of the formats in Item 7 at the start fishing time.

Item 4 End Latitude -North latitude, or loran in one of the formats in Item 7 at the end fishing time. An ending location is not necessary if the boat did not travel more than 300 feet or fish for more than 3 minutes.

Item 5 Start Longitude - West longitude, or loran in one of the formats in Item 7 at the start fishing time. The hundreds place is pre-coded to 100 with a “1”.

Item 6 End Longitude - West longitude, or loran in one of the formats in Item 7 at the end fishing time. The hundreds place is pre-coded to 100 with a “1”. An ending location is not necessary if the boat did not travel more than 300 feet or fish for more than 3 minutes.

Item 7 Geographic Format (GFormat) – The measurement units used to record the latitude and longitude coordinates at the start and end fishing times. All four measurements must be in the same units. For longitude all fishing locations on the Pacific coast are more than 100 degrees west of the prime meridian so the hundreds place has been pre-coded with a “1”. Proper punctuation must be used at least in the first row so that the numbers can be validated and entered into the system in the correct format.

The four geographic formats (GFormat) expected to be read from boat GPS and loran equipment (with proper punctuation):

- 1 = Degrees, minutes - DD°MM.MM'
- 2 = Site code – SSSS# (name must be written in Item 8
- 3 = Degrees, minutes, seconds - DD°MM'SS"
- 4 = Loran – LLLLL.L

Time		Latitude				Longitude				BDepth ft.		Obs Angs		Seal		Moue d boat			
	S									9		11		<input type="checkbox"/>	<input type="checkbox"/>				
	E									10		12		Temp F	gear	kat	kat	kat	
Site Name 8										GForma		13		Ftype					

Name & Physical Data

Name and Physical Data – Item 8 through Item 13

Item 8 Site Name -Record the common name for this site used by anglers and crew. If you are using an approved site code on your site code list, use the name printed on the list. If any angler or crew provides a name different than the name on your list for the site fished, then record this other name and give it to your supervisor. The name can be crossed checked with the lists in development. Print clearly as this data will be entered into the system.

Item 9 Minimum Bottom Depth (BDepth ft. Min) – Record the minimum bottom depth in feet.

Item 10 Maximum Bottom Depth (BDepth ft. Max) – Record the maximum bottom depth in feet.

Item 11 Observed Anglers -Record the number of anglers observed for the catch tallies at this location.

Item 12 Surface Temperature -Record the water temperature in degrees F. This is the average water temperature at or near the surface at this location.

Item 13 Fishing Type (FType) – This is one of the four predefined types of boat movement used for the fishing activity:

- 1=Free drift (engine not in gear)
- 2=Stationed (engine in/out of gear to maintain position)
- 3=Anchored (boat attached to the bottom)
- 4=Troll (engine in gear and powered to trolling speed)

Pinniped Data – Item 14 through Item 19

This is data collected for the observed angler group. The observed angler group

Time		Latitude				Longitude				BDepth ft.		Obs Angs								
		S					1													
		E					1													
Site Name																				

14 Seal	17 Moved boat
15 gear lost	18 lost time
16 bait lost	19 fish lost

Pinniped Data

should not change during fishing at a location in order to include someone who is being impacted by a seal or sea lion. You pick your group at random, if it is not the whole boat load, and stick with it. Changing your group because of non-observed angler catch or pinniped impacts is an obvious sampling bias. Record the total number of lost gear, bait, time and fish for your observed angler group.

Item 14 Seal (Pinniped Present) – Check *checkbox* if seals or sea lions were within 100 yards of the boat during fishing time at this location.

Item 15 Gear Lost –Record the total number of gear setups lost to seals or sea lions during fishing time at this location by the observed anglers. “00” = None lost.

Item 16 Bait Lost –Record the total number of baits lost to seals or sea lions during fishing time at this location by the observed anglers. “00” = None lost.

Item 17 Moved Boat – Check *checkbox* if the boat left this location due to the presence of seals or sea lions. Remember, some fishing time is required at the location for the location to be recorded, so this box can not be used if lines were never dropped into the water.

Item 18 Time Lost –Record the total number of minutes lost to seals or sea lions during fishing time at this location by the observed anglers. “00” = None lost.

Item 19 Fish Lost – Record the total number of hooked sportfish lost to seals or sea lions during fishing time at this location by the observed anglers. “00” = None lost.

Item by Item Instructions – 2000 On-Board Species Tally (yellow)

In this case as well, the item by item instructions have no item numbers printed on the form. The order followed will be sections with element numbers for reference. The tally form is in two main sections, assignment data and species by location records:

- 1) Assignment data (top of form)
- 2) Species Tally Data (cells in remainder of form)

Assignment Data

Assn#		Sampler		CPFV SPECIES TALLY SHEET													
Date		Name															
Location		1	2	3	4	5	6	7	Type								
1																	Kept
																	Kept
2																	Kept
																	Kept
3																	Kept
																	Kept
4																	Kept
																	Kept

Species Tally Data
More of the same on back.
14 species for 15 locations

Species Tally Data
Continued on reverse

Assn#		CPFV SPECIES TALLY SHEET CONTINUED															
Date		Name															
Location		8	9	10	11	12	13	14	15	Type							
1																	Kept
																	Kept
2																	Kept
																	Kept
3																	Kept
																	Kept

Assignment Data

1 Assn#	3	Sampler	4	CPFV SPECIES TALLY SHEET													
Date		Name															
Location		8	9	10	11	12	13	14	15	Type							
1																	Kept
																	Kept
2																	Kept
																	Kept
3																	Kept
																	Kept

There are four assignment data items, which are used both to link the data to the location data and the regular MRFSS. All of these items are required to be completed for the form to be acceptable. Be sure that these match the same data items on the location form.

Item 1 Assignment # - This is the same as Item 1 on the MRFSS Form.

Item 2 Date - This is the same as Item 3 on the MRFSS Form (YYYYMMDD).

Item 3 Interviewer Code - This is the same as Item 2 on the MRFSS Form.

Item 5 Sampler (Name) - Interviewers full name.

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Species Tally Data

There are 14 rows for species tallies with 7 location columns on the front and eight location columns on the back. If the diversity of the catch on a trip is more than 14 species, then a second tally sheet may be used with the row numbers recoded for species 15 on up. There are two items for each species to record on the row: the common name and the MRFSS species code. On the back of the form a smaller space is provided to write a shorthand name for the species for each row. The form may be bent over so that species names can be easily transcribed to the rear of the form.

For each location column there are two items to record for each species: the number of fish kept and the number of fish returned. The numbers of fish must be for the number of observed anglers on the matching location form. The catch per unit of effort for each species at each location will be calculated by dividing the number of fish kept or returned by the number of observed anglers.

		Location							Type
		1	2	3	4	5	6	7	
1	1								Kept
	2								Retd
	3								
	4								

Item 1 Common Name - This is the common name same as on the MRFSS form.

Item 2 Species Code - Use the standard MRFSS species codes.

Item 3 Number Kept - Record the number of fish of species *kept* at this location by the observed anglers. "0" or <blank> = None kept.

Item 2 Number Released - Record the number of fish of species *released* at this location by the observed anglers. "0" or <blank> = None released.

Recording Numbers Kept and Returned

The method used for recording the tally for fish kept or returned is called the "dot-line system". The system allows for a count up to ten in less space than the "mark" (i.e.) system does going to five.

dot-line system		
1	•	6
2	:	7
3	::	8
4	:::	9
5	!:	10

Species	Site	1
1	<i>China rockfish</i>	☒☒□
		8 8 2 6 0 1 0 1 2 5 :

Example. At the first location the number of China rockfish kept is 27 and the number released is 2.