AMERICAN SAMOA BOAT-BASED CREEL SURVEY DOCUMENTATION

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1.0 INTRODUCTION

The purpose of this manual is to document the American Samoa Department of Marine and Wildlife Resources (DMWR) Boat-based Creel Survey Program and to provide standard guidelines for this program. This manual may be used by creel survey program managers, data collection technicians, data entry technicians, data managers, and programmers to guide their work and to train new staff. This manual can also be provided to users outside of DMWR who want to learn more about the island creel survey programs. DMWR also has a Shore-based Creel Survey Program that monitors fishing activity that originates from shore. A similar manual is available for that program (see Oram, Risa. et al., 2010. *American Samoa Shore-based Creel Survey Documentation*).

The objective of the American Samoa Boat-based Creel Survey Program is to quantify fishing participation, fishing effort, methods used, and catch from vessels to support effective management of American Samoa's marine fishery resources. This necessitates the collection and analysis of Boat-based fishery data. The Boat-based Creel Survey is one of the major data collection systems used by DMWR to monitor and manage fisheries resources. This survey was formerly known as the American Samoa Offshore Creel Survey (or sometimes erroneously as a creel census). The preferred term is "boat-based" because it covers all the fishing done from a boat regardless of where the fishing occurred, for example, inside or outside the reef or lagoon. This is an important distinction because the place where the fishing is initiated (shore vs. boat) determines how that type of activity is accounted for in the survey systems. For instance, very small boats launched from non-standard launching areas, e.g., from the back of a pickup truck on a beach, are not included in the Boat-based Creel Survey.

DMWR has been monitoring boat-based fishing activities since the early 1980's to identify trends in fishing activities. During this period, survey and analysis methodologies have changed in response to fluctuations in budget and staff, changes in the fisheries, and the development of computer hardware and software. In 1981-1982, with the assistance of the Western Pacific Fisheries Information Network (WPacFIN) program, a computerized creel survey database system was created in Apple Open Terminology Services (OTS) relational database software DB Master. The American Samoa Offshore Expansion System (ASOES) programmed in Apple BASIC came later, followed by various versions of Dbase. The current database used to enter, verify, process, analyze, and expand the data runs in Visual FoxPro 6.0 SP2 and was implemented in 1990..

This documentation covers data collection procedures, including survey methodology, survey sites, scheduling methodology, quality assurance procedures, and reports generated by the data system. Survey forms and maps used by the program are shown in the Appendices.

2.0 SURVEY METHODOLOGY

American Samoa's Boat-based Creel Survey is a stratified, randomized data collection program. This program collects two types of data to estimate catch and effort information and to monitor fishing activity of the boat-based fishery: 1) Participation Counts to collect participation data; 2) Interviews to collect catch and effort data. American Samoa's Participation Counts are similar to what the other U.S. Pacific Island Creel Survey Programs call Boat Log and are basically a census count of the number of fishing vessels that make trips on survey days. The data collected are expanded at a stratum level (expansion period [quarterly or annually], day type [weekday or weekend], day or night, and gear type) level to create the estimated landings by gear type for this fishery.

3.0 SURVEY SITES

American Samoa's Boat-based Creel Survey Program collects Boat Log and Interview data at the following four main sampling areas in Tutuila: Pago Pago, Fagatogo, Utulei and Faga'alu (see "Appendix 1 Boat-based Creel Survey Map"). The Boat-based Creel Survey program uses standard spatial and temporal percent coverage factors to estimate the number of vessels outside the survey area.

4.0 DATA COLLECTION

The Boat-based Creel Survey Program in Tutuila is composed of two major data collection types: a Boat-based Participation Count and a Boat-based Interview.

4.1 Participation Count

The Participation Counts are used to document the boat-based fishing activity in Tutuila by recording the activity of boats coming and going from the four main ports or sampling areas (Pago Pago, Fagatogo, Utulei and Faga'alu). On survey days, staff drive along the main road that connects the four main ports for a minimum of 12 weekdays and 2 weekend days per month (Saturdays only as Sundays are not sampled). Staff make three different runs along the main road on each survey day.

Staff stop at each of the ports and record the number of berthed boats (out of their normal berths) and boats coming and going. Information is recorded on a Boat Based Participation Count Survey Form (see "Appendix 3 Tutuila Boat-based Participation Count Survey Form").

The Participation Count Survey Form includes:

- Date of survey.
- Type of day – weekday (WD) or weekend day (WE/HD).
- Interviewer's name and the shift they worked.
- Boat registration number.
- Time of observation for each of the three runs made on a survey day.

- Which boats are in and out during each of those runs (the assumption is that if a boat is not in port it is engaged in fishing, unless staff learn otherwise from reliable sources).
- Method of fishing (should be determined by asking the fishermen before they leave to go fishing or when they return; but is sometimes assumed to be similar to their historic fishing methods, since most boats employ the same methods on almost all trips).
- Number of gears.
- Number of fishers.
- Boat location.
- Comments.

Table 1. Tutuila Boat-based Participation and Interview Survey Schedule

Location	Minimum Survey Days per Month	Morning (AM) Shift			Evening (PM) Shift		
Pago Pago, Fagatogo, Utulei, Faga'alu	12 weekdays and 2 weekends/ holidays	05:00 - 13:30			14:00 - 22:30		
		Participation Survey Times:			Participation Survey Times:		
		6:00	9:00	12:00	15:00	18:00	21:00

Participation Counts are collected during two separate shifts per scheduled day, three times per shift as shown in Table 1. The Boat-based Participation Counts are conducted during the same shift and the same staff as the Boat-based Interviews. If any fishermen are encountered during or between participation runs, they are interviewed. The second run of the shift is conducted three hours after the first run and the third run of the shift is conducted three hours after the second run. Like the first run, if any fishermen are encountered during the second and third runs or between any of the participation runs, they are interviewed.

4.2 Interview

Staff members conduct interviews at the scheduled ports with fishermen returning from fishing trips to collect data on fish catch and species composition. Interview data are collected a minimum of 12 weekdays and 2 weekend days per month. Interviews are conducted at the same time as the participation counts and are recorded on the Boat-based Interview Survey Form (see "Appendix 4 Boat-based Interview Survey Form").

The Interview Survey Form includes:

- Interviewer's name.
- Date and time of interview.
- Whether the interview was opportunistic or not.
- Whether the interview was completed.
- Type of day – weekday (WD) or weekend/holiday (WE/H).
- Boat/owner name and boat registration number.

- Number of fishers.
- Fishing method.
- Number of gears.
- Number of hours fished.
- Number of days fished.
- Total catch.
- Home island and area fished.
- For longlining: number of sets; number of hours per set; number of hooks per set.
- For trip cost information: gallons of fuel used; price per gallon; cost of bait and chum used; cost of fishing gear lost; engine type (2s / 4s / diesel).
- Species name.
- Species length in centimeters and species weight in pounds.
- Number of pieces.
- Landing condition.
- Disposition.
- Price per pound.
- Captain/crew signature.
- Bycatch – Staff ask the fishermen if there was any fish thrown back (bycatch), and if there was, staff ask about the species name; species weight; number of pieces; disposition (live, or dead/injured); length, and comments. In Samoa it is very rare for fishermen to throw any fish back in the sea, but it is still important to ask if there is any bycatch.

Boats are chosen on a first-come-first-served basis for interviews. Multiple interviews can be obtained from each boat if they have fished multiple methods on a single trip. A different interview form is used for each new fishing method encountered. If multiple methods were used and staff were unable to separate the catch by method, and the fisher does not know how many hours were spent fishing for each method, then the method will be recorded as a "combined method" (e.g., bottom/spear, or bottom/troll). For returning boats staff may ask, "How did you do today?" or "What types of fishing did you do?"

4.2.1 Fish Identification, Measure, and Weight

During the interview, staff ask if they may examine the catch to measure and weigh the fish caught. For smaller catches, staff attempt to measure and identify all fish, time permitting. At times, fishers will allow staff to obtain both length and weight information, especially for rarely seen specimens. This is important for improving length-weight regressions. If staff encounter fishermen with a large catch in multiple coolers and do not have enough time to measure the entire catch, they measure and weigh at least five individual fish for each size class and species. Each individual specimen of a particular species is randomly selected with no preference for size. Staff count the total number of fish in one cooler (e.g., 10 fish) and multiply this by the number of coolers (e.g., 5 coolers) to get the total number of fish (e.g., 50 total fish). When an interview is difficult to obtain (e.g., the fisherman is a rush), staff attempt to estimate the fish catch by species level or by family level (e.g., miscellaneous reef fish, miscellaneous bottomfish).

Several standard units of measurement are used. All fish are measured with measuring boards or tapes, weighed with scales, and the data is recorded in centimeters and pounds. For finfish with forked tails, fork length (FL) is the standard unit of measurement. Billfish are measured from the tip of the lower jaw to the notch of the tail. For all other fish, whichever jaw extends the furthest is used and measured to the notch of the tail. For species with rounded or truncated tails, FL equals total length (TL).

4.2.2 A Complete Interview

A complete interview accounts for all of the catch and ensures that there are no missing or erroneous data. It is important to have a complete measure of all the catch per fishing trip since these data are used to determine the average catch per unit (trip) effort (CPUE) calculation. If staff are unable to count all of the catch during an interview, then they do not have the whole landing for that trip. If all catch cannot be measured during the interview (e.g., fisher was in a rush, uncooperative, etc.), staff should attempt to: 1) estimate the total number of fish per species, or if they cannot do that, then 2) estimate the total weight of the entire catch per species. If not all fish are measured, and an estimate of species composition and estimated weight per species could not be made, this entails an incomplete interview and is not used for data expansion purposes. Generally speaking, this is a rare event as complete interviews are typically collected by survey staff.

Participating in interviews is voluntary. If staff sense that a fisher does not want to provide data (e.g., fisher ignores staff, fisher states that he is in a rush), they cease the interview and thank the fisher for his/her time. Most fishers are cooperative and support American Samoa's overall fishery management program.

4.2.3 Opportunistic Data Collection Methodology

Sometimes during normal surveys − over time − there is not enough interview data from a particular fishing method to properly calculate CPUE for that method (e.g., snorkel/spear, rare event methods). For this reason, opportunistic interviews are employed. Opportunistic data can be collected on non-scheduled survey days at sample ports and sometimes other areas. This means that on occasion when there are no boats coming in or going out in the main survey area, staff drive out to the East or West (or keep someone on Aunu'u) to try to get opportunistic interviews from any boats coming in. These opportunistic data help provide a more accurate CPUE for the hard to obtain methods. The additional sites that are surveyed opportunistically are: a) Aunu'u; b) East and c) West (see "Appendix 1 Boat-based Creel Survey Map".)

At the time of writing this document, DMWR had one staff person living in Aunu'u who can conduct opportunistic interviews for the Boat-based Creel Survey Program. (In Aunu'u, only opportunistic interviews are conducted for the Boat-based Creel Survey Program.) If this staff person is not already scheduled to be a boat captain for the Fisheries Division, and he sees that a boat is out fishing or just came into the Aunu'u harbor from fishing, he stays in Aunu'u to try to interview the fishermen, following the interview

methodology described above. These opportunistic interviews occur about one to two times per month using the Boat-based Interview Survey Form (see "Appendix 4 Boat-based Interview Survey Form").

5.0 SCHEDULING METHODOLOGY

For Tutuila's Boat-based Survey, the Boat-based Participation Counts and Interviews are conducted at the same time using the same staff. Accordingly, these activities are scheduled for the same time. These activities are usually scheduled at for least one month at a time. Staff are scheduled for a minimum of 12 weekdays and 2 weekends days per month, for both an AM and PM shift on each day scheduled (see "Appendix 2 Sample Tutuila Boat-based Creel Survey Schedule").

When choosing the dates that are to be sampled, the scheduler first eliminates several days from the selection pool, including:

- Administrative days (including two payday Mondays per month and the 16th of each month for invoice collection day).
- Holidays.
- Sundays.

The American Samoa Government does not work on Sundays and local culture generally prohibits many fishing activities on Sundays, so only Saturdays are considered weekends. On payday Mondays, staff are assigned to work in the office. The invoice collection day is always on the 16th, unless it falls on a Saturday, in which case staff collects invoices on the 15th. If it falls on a Sunday, staff collect invoices on the 17th. If it falls on a holiday, the next available day is selected.

After these days are eliminated from the possible sampling days, the weekend dates are selected. The scheduler randomly selects two weekend days per month that will both be surveyed in the main area (Pago Pago, Fagatogo, Utulei and Faga'alu). Next, the scheduler randomly selects three weekday days per week, if there is no weekend survey scheduled; or two weekday survey days per week when a weekend day is scheduled. From the remaining available working days (weekend or weekday), the scheduler selects two days to collect opportunistic interviews from other areas north (Fagasa) and west (Asili). For the remaining days, staff are assigned to the Fish Aggregation Device (FAD) program or are given days off.

6.0 DATA QUALITY CONTROL

The Boat-based Creel Survey Program in American Samoa employs several methods to ensure quality assurance and quality control of the data that are collected. First, the data forms are completed by the data collection technicians. The technicians that collect the data are required to come back to the office and review the survey forms to check for any mistakes or missing data. If missing data are easily recalled, it can be filled in at that time. Staff turn in the forms to the boat-based supervisor. The supervisor reviews the forms to check for missing data (e.g., forgot to fill in some fields or the writing is unclear). The supervisor asks the data collection technicians to fill in the missing data or clarify unclear handwriting. All remarks and edits are written in red pencil and the supervisor writes their initials on the form next to the changes. After the supervisor approves the form, they sign it and return it to the data entry technicians. The data entry technicians write the date received and their initials on their forms.

The data are entered, on almost a daily basis, into the computer that has the Boat-based data system on it. If the system detects an error while entering data, an error prompt appears on the screen to notify the data entry technician that something is wrong. For example, a fish might be flagged as too long or too short for it's weight because the decimal point is in the wrong place. The data entry technician stops and talks to the supervisor. The supervisor either corrects the error or asks the data collection technician to correct it. If the mistake cannot be resolved at once, it is set aside for clarification, and once clarified it is entered into the database. Another error that might occur is when there is a new Samoan fish name on the form but no matching species in the code file used for validation during data entry. The data entry technician asks the supervisor and data collection technicians if there is another Samoan name for the fish. If there is and it is in the system, the data entry technician uses the existing name for the fish. If it is not in the system, the data entry technician asks the data manager to include it in the system (since the data manager is the only one authorized to make this type of change). If a new fish is included in the system, the data manager transfers the modified code files to the Boat-based and Shore-based databases.

After the data entry technician enters the form, they run the "suspicious interviews report" and follow up on any potential errors indentified in the report. After all errors are corrected, they sign their name to show that it is complete. The data manager reviews the final data entry and compares it to the raw data forms. If there are no errors, the data manager approves the form and signs it. If there is a problem, the data manager writes a note that describes the problem and signs it. The form then goes back to the data entry technician for correction. When the error is corrected, the data entry technician signs the form and the process is complete. The paper forms are scanned and archived using the Document Imaging Archival System (DIAS), developed by WPacFIN, and then filed by quarter into the filing cabinet. The data file is given to the supervisor on at least a monthly basis.

Finally, WPacFIN comes to correct data issues (e.g., remove roadblocks throughout the data entry system, look for data entry errors, changes in the fishery that are not reflected in the database system) and they back up the system at that time. The QA module, which is run at this time, includes three main steps: 1) make sure data are entered and up to date, 2) check for data

entry errors and gaps in the data, and 3) cross check data from different data systems. The staff should run the QA module before data are shared or published.

6.1 Fish Identification Training

American Samoa does not have a comprehensive fish identification training formulated for their staff at this time. Some planning to do this has begun, but more time and effort needs to be spent to develop a training module for new staff and refresher courses for existing staff. There is recurring confusion with species names because Samoan names are not standardized. Staff must work toward learning scientific names of fish species.

7.0 REPORTS

The WPacFIN data processing system generates data entry validation reports, maintenance reports, and various data summary reports, including expanded catch and effort (see "7.1 Boat-based Expanded Catch and Effort Report"), and expanded species composition ("7.2 Boat-based Expanded Species Composition Report").

7.1 Boat-based Expanded Catch and Effort Report

The following is an example annual expanded report that shows the estimated landings by gear type for this fishery.

AMERICAN SAMOA OFFSHORE CREEL SURVEY SYSTEM
SUMMARY REPORT OF CPUE DATA BY FISHING METHOD
For All Fishing Boats
For Tutuila & Manua
For All Species

Calendar Year 2007

	ATULE-MIXED	BOTTOMFISHING	BTM/TRL MIX	LONGLINE	SPEAR	TROLL	TOTAL
Total Number of Interviews	85	112	16	210	53	118	594
No. of Interviews with Hours	84	107	16	210	53	115	585
No. of Interviews with Fishers	85	110	16	210	53	116	590
No. of Interviews with Fisher-Hours	84	107	16	210	53	113	583
No. of Interviews with Num of Gear	80	106	16	208	48	108	566
Estimated Boat-Days on Survey	126.00	263.00	14.00	192.00	144.00	114.00	855.00
Average Boat-Days Per Day	0.52	1.03	0.05	0.74	0.59	0.42	3.35
Average Fishers Per Trip	1.29 - 11.19%	3.12 - 13.22%	2.98 - 17.15%	3.29 - 2.24%	4.97 - 7.68%	3.10 - 12.02%	3.19 - 1.64%
Average Boat-Hours Per Trip	4.87 - 5.26%	11.6 - 16.40%	8.31 - 33.81%	8.36 - 1.94%	7.61 - 8.87%	4.97 - 12.93%	8.25 - 1.77%
Average Fisher-Hours Per Trip	6.36 - 13.68%	36.7 - 24.26%	24.6 - 34.03%	27.5 - 3.00%	38.4 - 12.38%	14.9 - 16.32%	27.3 - 2.43%
Average Num of Gear Per Trip	1.42 - 26.53%	3.22 - 13.73%	3.11 - 20.23%	.358 - 2.12%	4.63 - 8.00%	3.06 - 10.25%	
Average Catch Per Boat-Day	37.1 - 7.65%	110 - 9.66%	88.0 - 19.42%	508 - 5.96%	104 - 10.84%	175 - 12.92%	194 - 7.80%
Average Catch Per Boat-Hour	7.6120 - 22.94%	9.5508 - 23.31%	10.585 - 35.21%	60.775 - 12.06%	13.624 - 32.16%	35.150 - 36.98%	23.509 - 8.77%
Average Catch Per Fisher-Hour	5.8337 - 20.31%	3.0111 - 23.21%	3.5736 - 45.85%	18.485 - 12.54%	2.7014 - 28.45%	11.769 - 37.48%	7.0965 - 9.25%
Average Catch Per Num of Gear	26.163 - 23.27%	34.283 - 34.28%	28.283 - 61.89%	1418.8 - 11.86%	22.368 - 31.33%	57.099 - 45.76%	
Expanded Number of Boat-Days	164.05	326.64	14.47	235.27	185.76	133.32	1059.49 - 1.47%
Expanded No. of Fishers	212.21 - 6.39%	1018.90 - 4.86%	43.17 - 7.68%	773.71 - 2.57%	922.56 - 5.64%	413.50 - 6.23%	3384.05 - 2.37%
Expanded No. of Boat-Hours	799.60 - 5.55%	3779.02 - 6.67%	120.28 - 9.33%	1965.82 - 2.45%	1412.93 - 5.07%	663.23 - 6.88%	8740.88 - 3.14%
Expanded No. of Fisher-Hours	1043.33 - 7.26%	11986.4 - 8.52%	356.28 - 10.08%	6463.36 - 2.93%	7125.73 - 6.79%	1980.91 - 7.23%	28956.0 - 4.00%
Expanded No. of Gear	232.64 - 7.82%	1052.79 - 5.00%	45.02 - 8.43%	84.21 - 2.51%	860.57 - 6.27%	408.28 - 6.09%	
Expanded Catch	6086.53 - 9.12%	36092.8 - 17.53%	1273.19 - 20.88%	119473 - 9.22%	19249.6 - 13.37%	23312.5 - 16.10%	205487 - 6.57%

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7.2 Boat-based Expanded Species Composition Report

The following is an example report of an annual expanded report that shows species composition summaries for Tutuila and Manu`a. This report shows pounds caught, pounds sold, value and price per pound for the year.

AMERICAN SAMOA OFFSHORE CREEL SURVEY SYSTEM
SPECIES COMPOSITION SUMMARY BY FISHING METHOD
For Tutuila & Manua
CALENDAR YEAR 2007

Species	Pounds Caught	Pounds Sold	Value	Price/ Pound
ALL METHODS				
Albacore tuna	44,535	44,469	$73,358	$1.65
Amberjack	64	64	$161	$2.50
Barracudas	668	547	$1,282	$2.34
Barred flagtail	2	2	$6	$2.13
Bigeye bream	93	52	$123	$2.33
Bigeye scad	2,584	2,558	$4,499	$1.75
Bigeye squirrelfish	7	7	$19	$2.75
Bigeye trevally	92	92	$220	$2.38
Bigeye tuna	6,484	6,484	$11,860	$1.82
Bigscale soldierfish	101	101	$260	$2.56
Black jack	717	711	$1,542	$2.16
Black marlin	448	448	$448	$1.00
Black snapper	73	53	$113	$2.10
Blacktip grouper	51	3	$7	$2.04
Blue lined gindai	70	70	$140	$2.00
Blue lined snapper	1,148	1,071	$2,575	$2.40
Blue marlin	2,800	2,800	$3,986	$1.42
Blue-banded surgeonfish	3,602	3,602	$8,372	$2.32
Bluefin trevally	72	0	$0	$0.00
Bottomfishes (unknown)	11,077	11,077	$25,627	$2.31
Bronze soldierfish	21	21	$48	$2.27
Brown jobfish	43	41	$105	$2.57
Brown surgeonfish	1,098	1,096	$2,579	$2.35
Butterflyfishes	30	30	$75	$2.43
Cheilinus wrasses	132	132	$337	$2.54
Crabs	19	19	$44	$2.34
Deep water snappers	34	34	$81	$2.33
Dogtooth tuna	670	640	$1,455	$2.27
Eels	104	104	$262	$2.50
Emperors	2,715	2,134	$5,153	$2.41
Filefishes	189	184	$409	$2.21
Flower snapper (gindai)	256	254	$587	$2.30
Fringelip mullet	2	2	$8	$3.25
Giant clam	1,757	1,757	$1,757	$1.00
Goatfishes	13	13	$29	$2.22
Gold banded fusilier	2	2	$6	$2.25
Goldflag jobfish	215	203	$375	$1.84
Gray jobfish	1,791	1,477	$3,508	$2.37
Great barracuda	14	14	$29	$2.10
Greater amberjack	958	893	$1,983	$2.22
Grey reef shark	10	10	$5	$0.50
Groupers	1,130	1,051	$2,477	$2.35
Harlequin tuskfish	6	6	$13	$2.00
Hermit crab	28	28	$46	$1.65
Humpback snapper	3,486	3,462	$8,159	$2.35
Inshore snappers	58	40	$97	$2.39
Jacks	413	407	$977	$2.39

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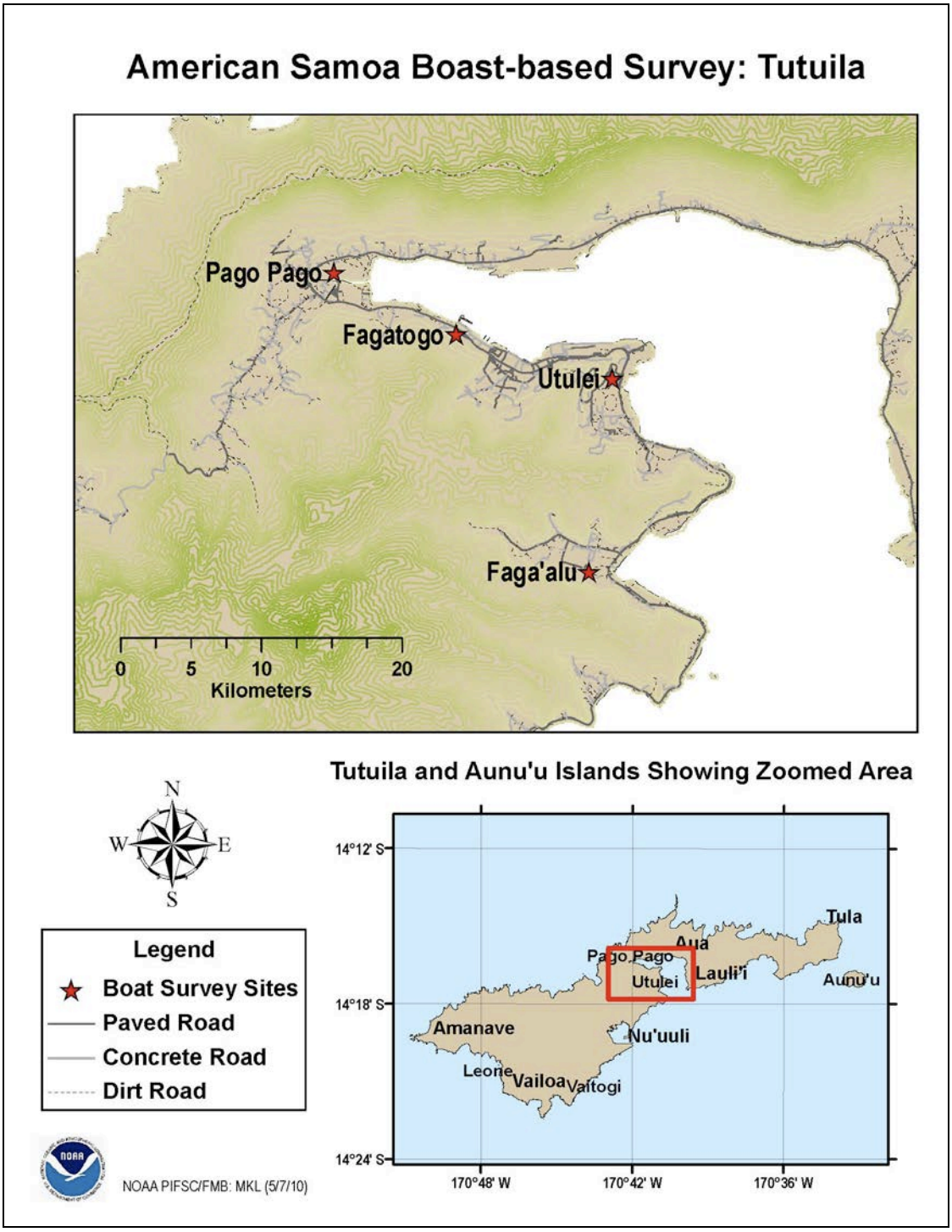
APPENDIX 1 BOAT-BASED CREEL SURVEY MAP



APPENDIX 2 SAMPLE TUTUILA BOAT-BASED CREEL SURVEY SCHEDULE

TUTUILA BOAT-BASED SCHEDULE (June 23 - July 26, 2008)							
		Mon	Tue	Wed	Thur	Fri	Sat
Samplers	Time	23-Jun	24-Jun	25-Jun	26-Jun	27-Jun	28-Jun
Sitivi Terry	05:00-13:30	Office	East	Main	Main	Main	OFF
Carl Chey	14:00 - 22:30	Office	East	Main	Main	Main	OFF
Hymal	07:30-16:00	FAD	FAD	FAD	FAD	FAD	OFF
		Mon	Tue	Wed	Thur	Fri	Sat
Samplers	Time	30-Jun	1-Jul	2-Jul	3-Jul	4-Jul	5-Jul
Sitivi Terry	05:00-13:30	Main	Main	OFF	West	HOLIDAY	Main
Carl Chey	14:00 - 22:30	Main	Main	OFF	West		Main
Hymal	07:30-16:00	FAD	FAD	OFF	FAD		FAD
		Mon	Tue	Wed	Thur	Fri	Sat
Samplers	Time	7-Jul	8-Jul	9-Jul	10-Jul	11-Jul	12-Jul
Sitivi Terry	05:00-13:30	Office	Main	Main	East	Main	OFF
Carl Chey	14:00 - 22:30	Office	Main	Main	East	Main	OFF
Hymal	07:30-16:00	FAD	FAD	FAD	FAD	FAD	OFF
		Mon	Tue	Wed	Thur	Fri	Sat
Samplers	Time	14-Jul	15-Jul	16-Jul	17-Jul	18-Jul	19-Jul
Sitivi Terry	05:00-13:30	Main	West	INVOICE	OFF	Main	Main
Carl Chey	14:00 - 22:30	Main	West		OFF	Main	Main
Hymal	07:30-16:00	FAD	FAD	FAD	OFF	FAD	FAD
		Mon	Tue	Wed	Thur	Fri	Sat
Samplers	Time	21-Jul	22-Jul	23-Jul	24-Jul	25-Jul	26-Jul
Sitivi Terry	05:00-13:30	Office	Main	Main	Main	East	OFF
Carl Chey	14:00 - 22:30	Office	Main	Main	Main	East	OFF
Hymal	07:30-16:00	FAD	FAD	FAD	FAD	FAD	OFF

APPENDIX 3 TUTUILA BOAT-BASED PARTICIPATION COUNT SURVEY FORM

Tutuila Boat-based Creel Survey Participation Form

Department of Marine and Wildlife Resources
American Samoa

DATE: _____

INTERVIEWER(S):

	Carl	Mika	Terry	Sitivi	Hymal	Chey
AM						
PM						

(1) WD (2) WE/HD
METHOD:

(2) Š Troll
(4) Š Bottom
(5) Š Troll/Bottom
(6) Š Spear Diving
(16) Š Longline
(62) ŠOther__

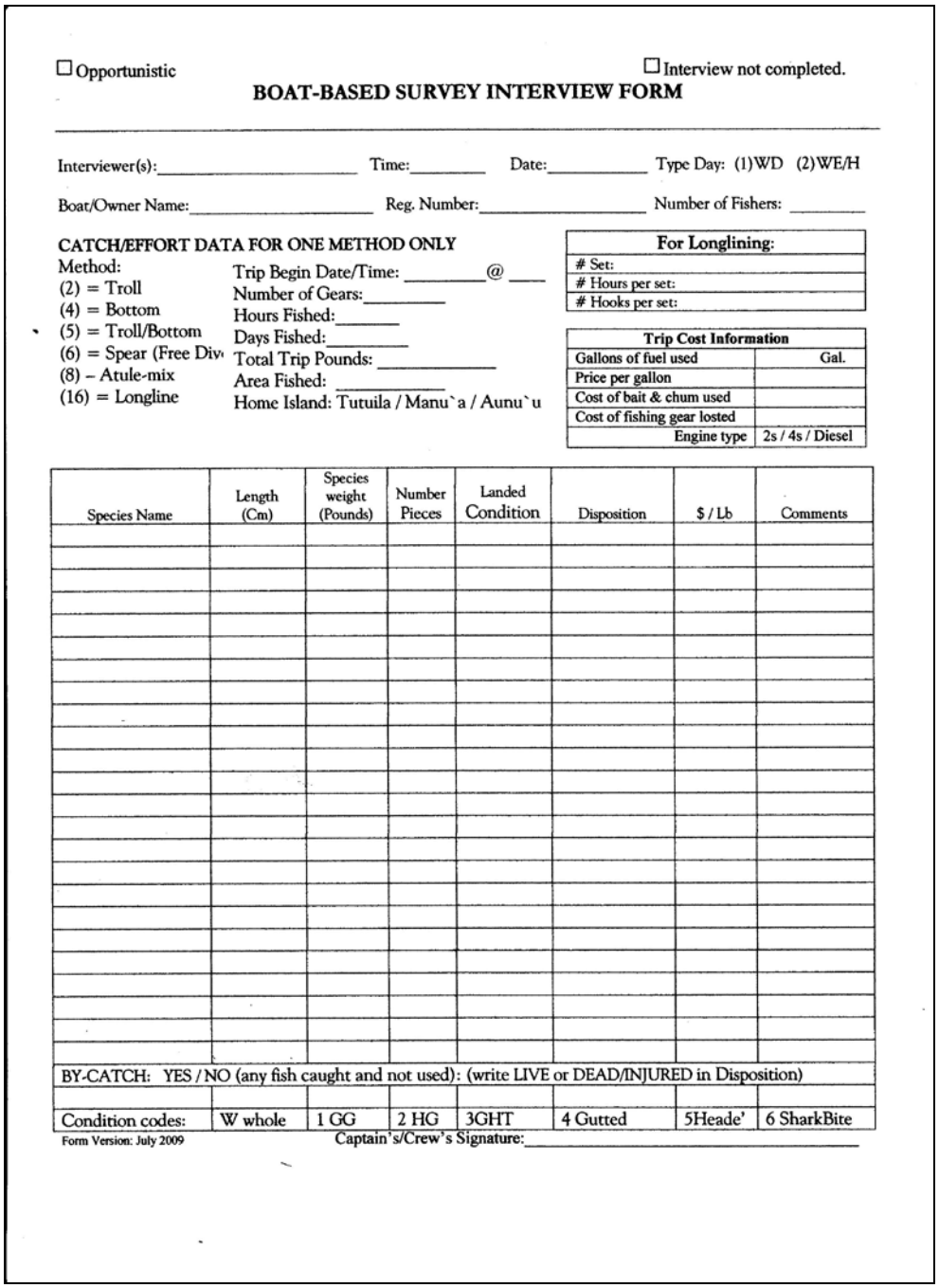
BOAT REG #	Time of Observation									Method of Fishing	Number of Gear	Number of Fishers	Boat Location
	Run 1	In	O	Run 2	In	O	Run 3	In	O				
AS 99CF													Fagatogo
AS 472CF													Ņ
AS 624CF													Ņ
AS 663CF	Inactive												Ņ
AS 536CF													Ņ
AS 621CF													Ņ
AS 330CF													Ņ
AS 689CF													Ņ
AS 546CF													Ņ
AS 502CF													Ņ
AS 571CF													Ņ
AS 499CF													Ņ
AS737CF													Utulei
AS460CF													Fagasa
AS 480CF													Pago
AS 321CF													Ņ
AS 395 CF													Asili
AS 271CF	onland			onland									Iliili
AS 699PU	onland			onland									Amaluia
Vae	onland			onland									Afao

Comments:

Form Version: July 2008

APPENDIX 4 BOAT-BASED INTERVIEW SURVEY FORM

Boat-based data are also collected on Manu'a. The Manu'a Islands survey is a 100% census because the islanders that collect the data know when all the boats are coming in and going out (only two boats at the time of writing this document). This same interview form used on Tutuila is used on Manu'a to gather all the catch information when the boats are coming back in.



☐ Opportunistic ☐ Interview not completed.

BOAT-BASED SURVEY INTERVIEW FORM

Interviewer(s):_____ Time:_____ Date:_____ Type Day: (1)WD (2)WE/H

Boat/Owner Name:_____ Reg. Number:_____ Number of Fishers: _____

CATCH/EFFORT DATA FOR ONE METHOD ONLY

Method:
(2) = Troll
(4) = Bottom
(5) = Troll/Bottom
(6) = Spear (Free Div
(8) – Atule-mix
(16) = Longline

Trip Begin Date/Time: _____@ ____
Number of Gears:_____
Hours Fished:_____
Days Fished:_____
Total Trip Pounds: _____
Area Fished: _____
Home Island: Tutuila / Manu`a / Aunu`u

For Longlining:
Set:
Hours per set:
Hooks per set:

Trip Cost Information	
Gallons of fuel used	Gal.
Price per gallon	
Cost of bait & chum used	
Cost of fishing gear losted	
Engine type	2s / 4s / Diesel

Species Name	Length (Cm)	Species weight (Pounds)	Number Pieces	Landed Condition	Disposition	$ / Lb	Comments
BY-CATCH: YES / NO (any fish caught and not used): (write LIVE or DEAD/INJURED in Disposition)							
Condition codes:	W whole	1 GG	2 HG	3GHT	4 Gutted	5Heade'	6 SharkBite

Form Version: July 2009

Captain's/Crew's Signature:_____