SPC/FFA REGIONAL PURSE SEINE OBSERVER
LENGTH MEASUREMENT

FORM PS - 4

REV MAR. 2014

OBSERVER NAME	VESSEL NAME	OBSERVER TRIP ID NO.	PAGE	OF

SAMPLING DETAILS

SAMPLE TYPE (fill only one of grab, spill)	*if* GRAB — what is the Target No. of SAMPLES from each BRAIL	*if* SPILL — brail # sampled / How many fish measured ?	*if* OTHER — What "Other" ? Use code (*from back of form*)	Which brail size was sampled ? (*see PS-1*) BRAIL 1 (*tick one*) BRAIL 2	BRAIL TIMES start / end	PS-4 FORMS USED FOR THIS ONE SAMPLE: __ of __ (1, 2, 3) (total)	START OF SET DATE AND TIME (see PS-2) Y Y / M M / DD / h h / m m

MEASURING INSTRUMENT — Calibrated this set ? Aluminium callipers ☐ Deck tape ☐ Measuring board ☐ Other ☐   **Y / N**

COMMENTS ON SAMPLING PROTOCOL

MEASUREMENTS FOR EACH SPECIES
UF - UPPER JAW TO FORK IN TAIL (TUNA, SHARK)
LF - LOWER JAW TO FORK IN TAIL (BILLFISH)
TW - TOTAL WIDTH (TIPS OF WINGS - RAYS)
TL - TOTAL LENGTH - TO END OF TAIL (FISH WITH NO FORK IN TAIL)
CL - CARAPACE LENGTH (TURTLES)

BRAIL tallies:

	Full (**1**)	7/8 brails (**2**)	3/4 brails (**3**)	2/3 brails (**4**)	1/2 (**5**)	1/3 (**6**)	1/4 (**7**)	1/8 (**8**)	TOTAL BRAILS	SUM OF ALL BRAILS (*see back of form*)
No.										

Pattern	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
fullness																														
samples																														

SPECIES CODE	LENGTH (cm)	SPECIES CODE	LENGTH (cm)	SPECIES CODE	LENGTH (cm)	SPECIES CODE	LENGTH (cm)	SPECIES CODE	LENGTH (cm)	SPECIES CODE	LENGTH (cm)
1		21		41		61		81		101	
2		22		42		62		82		102	
3		23		43		63		83		103	
4		24		44		64		84		104	
5		25		45		65		85		105	
6		26		46		66		86		106	
7		27		47		67		87		107	
8		28		48		68		88		108	
9		29		49		69		89		109	
10		30		50		70		90		110	
11		31		51		71		91		111	
12		32		52		72		92		112	
13		33		53		73		93		113	
14		34		54		74		94		114	
15		35		55		75		95		115	
16		36		56		76		96		116	
17		37		57		77		97		117	
18		38		58		78		98		118	
19		39		59		79		99		119	
20		40		60		80		100		120	

No. / sum of lengths (×6 across)

column totals

			SKJ			Column totals			SKJ			Column totals			SKJ		
			YFT						YFT						YFT		
			BET						BET						BET		

	TARGET SPECIES			OTHER SPECIES				
	SKJ	YFT	BET					
Number sampled :								
Sum of lengths :								
Average length :								

Observer Name		Put first name first and last name (family name as it would be recorded in a passport) last.
Vessel Name		Full name of vessel (no abbreviations)
Observer Trip ID		Use number assigned to the observer by the Observer Programme, for this trip. E.g.: AZA 03-01
Page of		Number all the PS-4 forms in sequence from the start until the end of the trip.
Start Set Date & Time		Record the date and time that the ship is using, exactly as it is recorded on Forms PS-2 and PS-3.

SAMPLING DETAILS

Sample type	- Grab - Spill - Other	Fill in only one of the three sampling option areas - **GRAB**, **SPILL** or **OTHER**. In normal **GRAB** samples target 5 fish from every brail. If fish are large target 4 or 3 per brail. Record the target number. If **SPILL** sampling record the brail number being sampled. When finished record the number of samples taken from that brail
"**OTHER**" samples can only be one of: (*use code*)		**DA** - all discards **DT** - only discarded tunas **BS** - bycatch - select species (one or more different species but not all species)
Brail times (*start* and *end*)		Record when first brail came onboard (*start*) and when last brail came onboard (*end*) for transfer to Form PS-3.
Which brail size ?		Usually BRAIL 1., but a vessel may use two different sized brails (see PS-1). Sample one brail size on one form. If two brail sizes are used: always prepare two forms, even if only measuring from one brail size, as the "sum of all brails" must be calculated for each brail size separately! (Note: it is preferable to sample both brail sizes on to their own forms)
Forms used this sample:		Record forms used only for this sample as "number of the form used" out of "total used". Eg.: "1 of 1", "1 of 2", "2 of 3".
Target samples per brail		If "normal" sampling record No. of fish observer tried to measure from each brail. If not normal sampling record a dash.
Measuring instrument		Record whether callipers, flat ruler or deck tape was used. N.B. - do not use tape measures.
Comments on Protocol		Explain why you sampled as you did, especially if you tick "Other" or collect two samples. Were their any problems? If conditions allow during **GRAB** sampling, experienced observers are asked to use two forms when brailing mixed tuna sets - one for "**GRAB**" species composition and the second for "**OTHER**" - BET/YFT only" species composition sampling.
Brail *tallies*		Record a tally mark for every full, 7/8, 3/4, etc., brail that comes onboard. Count marks and write totals in corner boxes.
Total No. *of* Brails		a **simple** count of all the brails that came onboard, whether full or not full. Add numbers in all corner boxes together.
Sum of ALL Brails		must be **calculated** using the work area below. If two brail sizes are used, calculate each one on a separate form.
Brail pattern - fullness and samples - record a fullness code (1-8) and the number of fish measured for every brail that comes on board		

MAIN BLOCK

Species Code 1- 120	Record species measured fish in the order they are sampled - follow field numbers down one column and then the next, etc.
Column totals	To ease adding the lengths of each species in the entire sample first count each species and add the lengths of each species in each column, then add totals from each column together before making the average length calculations.

AVERAGE LENGTH CALCULATIONS   (these totals are also used to check data entry, so must be accurately added)

A	Number Sampled	Write in the total number of each species that were sampled in this set (add the column totals for a species).
B	Sum of Lengths	Add lengths of each species sampled in each column then add the column totals for each species together.
C	Average Length	To get the "average length" (C) of each species in the sample divide the "sum of lengths" (B) by the "number sampled" (A).

IMPORTANT POINTS ON THE SAMPLING PROTOCOL

1	For most sets observers carry out either a "Grab" or a "Spill" sample, as they have been directed and are equipped to do.
2	If grab sampling spread sampling throughout the entire brailing process. Try to take 5 tuna from every brail. If a specimen is missed occasionally try to get an extra one from the next brail but try to keep the number of tuna steady throughout the sampling process. If brailing is too fast measure less than 5 tuna per brail but try to sample the same number from every brail. If problems describe in comments.
3	Always get a random sample. Don't choose fish just because they are the easiest size to handle or because you haven't had one like that yet.
4	Do not include measurements from fish that crew select even though they are trying to help.
5	IT is very, very important to correctly identify juvenile yellowfin and bigeye tuna!
6	If using a deck tape, ensure one end is placed against a flat surface or has a nose block. Make sure the end of the tape starts at 0 cm. If using deck tape, make sure fish is on the tape straight when measuring. Never bend tail down to measure. Look directly over top of tail.
7	Do not measure damaged fish.
8	Record lengths to the nearest centimetre below e.g. a 69.9 cm fish will be recorded as 69 cm.
9	ALWAYS record all species and lengths in full and in order in the columns provided. Follow the numbered order. Do not use ditto marks !
10	If taking an "Other" sample, start a new PS-4 page, tick "**Other**" and write what that other is. Most often this will be lengths from <u>every species</u> still on deck, ready to throw away after brailing is ended. Record as "all discards". Remember to still collect specimens at random, as trained. Do not be tempted to choose different (or same) sizes. N.B. – "All discards" includes target discards (SKJ-YFT-BET) and bycatch discards. "All discard bycatch" is for sampling only bycatch discards. Usually an "Other" sample is collected after, or along with, a "Normal" sample but it could also be collected as an only sample.

CALCULATING SUM OF ALL BRAILS	**How many ?**	Full	7/8	3/4	2/3	1/2	1/3	1/4	1/8	SUM OF ALL BRAILS
	Full and part brails - get these numbers from the "No." boxes of each tally box.									
		x 1	x 0.875	x 0.75	x 0.667	x 0.5	x 0.333	x 0.25	x 0.125	
	Equivalent full brails (use a calculator!)		+	+	+	+	+	+	+	=