

APPENDIX 11 Examples of useful forms for data collection

This suite of forms allows observers to collect various catch and biological information as required by many programmes.

1. SAMPLING FORM A – STATION AND CATCH

This form can be used as the principal form to which all other forms are linked. It records the station (fishing event) information. A form such as this is vital for any sampling.

SAMPLING FORM A - Station and Catch									
For office use:		1st Punch:		2nd Punch:		Sheet ID:			
STATION INFORMATION:									
Vessel Name:				Trip No:		Target Species:			
IRCS or Licence No:				Station No:		Haul No:			
1. Observer / Sampler Name:					1. Observer No / Sampler No:				
2. Observer / Sampler Name:					2. Observer No / Sampler No:				
Date Set:		Time Set:		Date Hauled:		Time Hauled:			
		Latitude South			Longitude East				
Position Set:		Degrees:		Minutes:		Degrees:		Minutes:	
Position Hauled:		Degrees:		Minutes:		Degrees:		Minutes:	
Area Fished:		Wind Direction:		Wind Speed:		Sky Cover:			
Sea Surface Temp:		Bottom or Gear Temp:		Sea State:		Sea Colour:			
Gear Type:		Gear No / Mesh:		Bottom Depth (m):		Gear Depth (m):			
CATCH INFORMATION:									
No:	Species:	Total Catch: (kg)	No Sampled:	Weight Sampled : (kg)	Forms Used				
					2A Lfreq	2B Size Bin	2C Biological	2D Crab	2E Lobster
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									

2. SAMPLING FORM B – LENGTH FREQUENCY FOR INDIVIDUAL FISH

SAMPLING FORM B - Length Frequency For Individual Fish											
For office use:			1st Punch:			2nd Punch:			Sheet ID:		
Vessel ID:			Trip No:			Station No:			Date:		
									First Sampler No:		
No	Species	Length	No	Species	Length	No	Species	Length	No	Species	Length
1			26			51			76		
2			27			52			77		
3			28			53			78		
4			29			54			79		
5			30			55			80		
6			31			56			81		
7			32			57			82		
8			33			58			83		
9			34			59			84		
10			35			60			85		
11			36			61			86		
12			37			62			87		
13			38			63			88		
14			39			64			89		
15			40			65			90		
16			41			66			91		
17			42			67			92		
18			43			68			93		
19			44			69			94		
20			45			70			95		
21			46			71			96		
22			47			72			97		
23			48			73			98		
24			49			74			99		
25			50			75			100		

This form may appear a very long-hand way to record the lengths of fish but it is extremely useful for new observers. It also assures that observers do write down the length of each fish rather than just do tallies that can often become a mess if observers are not used to them. Also, more than one species can be completed on each form.

3. SAMPLING FORM C – LENGTH FREQUENCY BY 1CM CLASS

This form is the more usual tally form for length frequency. It can be changed to any size length class (e.g. $\frac{1}{2}$ cm or 5cm). This form is useful for more experienced observers who may find it quicker than form B. It can only be used for one species.

SAMPLING FORM C - Length Frequency by 1cm class				
For office use:		1st Punch:	2nd Punch:	Sheet ID:
Vessel ID:	Trip No:	Station No:	Date:	First Sampler No:
Species Code:		please note - only one species can be recorded on each form		

Length	Tallies	Total
0		
1		
2		
3		
4		
5		
6		
7		
8		
9		
0		
1		
2		
3		
4		
5		
6		
7		
8		
9		
0		
1		
2		
3		
4		
5		
6		
7		
8		
9		
0		
1		
2		
3		
4		
5		
6		
7		
8		
9		
Total Number:		

Length	Tallies	Total
0		
1		
2		
3		
4		
5		
6		
7		
8		
9		
0		
1		
2		
3		
4		
5		
6		
7		
8		
9		
0		
1		
2		
3		
4		
5		
6		
7		
8		
9		
Total Number:		

4. SAMPLING FORM D – BIOLOGICAL SAMPLES FOR INDIVIDUAL FISH

This form is used for biological sampling of fish. More than one species can be used per form and the columns can then be completed as appropriate.

SAMPLING FORM D - Biological Samples for Individual Fish								
For office use:		1st Punch:		2nd Punch:		Sheet ID:		
Vessel ID:		Trip No:		Station No:		Date:		First Sampler No:
No	Species	Length (cm)	Sex	Maturity	Weight (g)		Gonad	Sample Type
					Total	Gutted		
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
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21								
22								
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30								
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40								

5. SAMPLING FORM E – CRAB SAMPLES

This form has been included as an example of a specialist form for specific species with unusual requirements. Other forms like this can be developed for other special species.

SAMPLING FORM E - Crab Samples															
For office use:		1st Punch:			2nd Punch:			Sheet ID:							
Vessel ID:		Trip No:			Station No:			Date:		First Sampler No:					
Species Code:															
No	Width (mm)	Sex	Berry	Shell State	Maturity	Weight (g)	Sample Type	No	Width (mm)	Sex	Berry	Shell State	Maturity	Weight (g)	Sample Type
1								31							
2								32							
3								33							
4								34							
5								35							
6								36							
7								37							
8								38							
9								39							
10								40							
11								41							
12								42							
13								43							
14								44							
15								45							
16								46							
17								47							
18								48							
19								49							
20								50							
21								51							
22								52							
23								53							
24								54							
25								55							
26								56							
27								57							
28								58							
29								59							
30								60							

1. OBSERVER GUIDELINES FOR COMPLETING SAMPLING FORM A

- This form is used for each station, only one form per station is completed.
- You should use a new form for each new station.
- Some of the information will be completed after you have completed the sample. The station details are usually obtained from the captain on the bridge after the hauling has finished for trawls and after it has begun for longlines. Always be sure to check that you record the correct information for each station. It is usually helpful to be on the bridge when the hauling starts and to record some of the station data prior to sampling.
- Only the fields **underlined** are essential, these fields **must be completed**. The others you complete if you can obtain the information.

FOR OFFICE USE:

- This information is required for office use and does not need to be completed by observers.

STATION INFORMATION:

- **Vessel Name**: enter the name of the vessel in block capitals.
- **IRCS (International Radio Callsign) or Licence No**: enter the code of letters or letters and numbers which is the International radio callsign of the vessel or enter the licence number of the vessel as recorded on their licence.
- **Trip No**: enter the trip number for the vessel.
- **Station No**: This is a very important piece of information which is generated by the observer. A station is basically a sampling event associated with a fishing event. That is each trawl, or longline, or day of pole and line fishing that is sampled is given a different station number. Therefore if you sample 2 different trawls in one day that is two stations. When you join a vessel on a new fishing trip (i.e. when it has left port again) you start your station numbers at 1 and proceed numbering each consecutively. If you return to port with a vessel and then leave again on the same vessel you again start at 1. So be sure to enter the correct station number in each form.
- **Haul No**: This is the number of the haul of that day; this should correspond with the haul number recorded in the logbook.
- **Target Species**: enter the three letter code for the target species of the fishing event.
- **Observer Name / Sampler Name**: enter the initial and surname in block capitals of the 1 or 2 observers or samplers sampling the catch.
- **Observer No. / Sampler No**: enter your unique observer code or sampler code.
- **Date set**: enter the date in **dd/mm/yy** format for the day that the trawl or longline that you are sampling was set.
- **Time set**: enter the time in 24 hour notation that the gear was set. For a trawl that is the time the gear starts to fish, i.e. when the trawl reaches the depth for fishing. For longlines it is the time when the first section of the net is deployed into the water. For pole and line fishing it is the time when fishing starts.
- **Date hauled**: enter the date in **dd/mm/yy** format for the day that the trawl or longline that you are sampling was hauled or that hauling began. (Note for trawls this will usually be the same day as the haul date, but for longlines it is likely that they are set and left over one or two nights, the captain will provide you with this information).
- **Time haul**: enter the time in 24 hour notation that the gear hauling began. For a trawl that is the time the winches start to haul. For longlines it is the time when the first section of the net is hauled on board. For pole and line fishing it is the time when all fishing ends.
- **Latitude S (deg and mins)**: enter the latitude south that the vessel is at when the gear is set and hauled.
- **Longitude E (deg and mins)**: enter the longitude east that the vessel is at when the gear is set and hauled.
- **Area fished**: This is for use by certain fisheries only using the table provided.
- **Wind Direction**: Record the direction that the wind is coming from when the gear is set, using one of the codes for the 8 points of the compass described in Table 1.
- **Wind Speed**: Record the wind speed when the gear is set, using the Beaufort scale as described in Table 2.

- **Sky cover:** Record the appropriate code from Table 3 for the amount of cloud or fog cover of the sky when the gear is set.
- **Sea Surface Temperature (SST):** Record the temperature of the sea surface in **degrees centigrade (C°)** when the gear is set.
- **Bottom or Gear Temperature:** Record the temperature of the sea bottom or on the gear in **degrees centigrade (C°)** when the gear is fully set.
- **State of Sea:** Record the appropriate code for the sea state, as given in Table 4.
- **Colour of Sea:** Record the appropriate code for the Colour of the sea when the gear is set, Table 5.
- **Gear type:** enter one of the codes from Table 6, for the type of gear that you are sampling:
- **Gear Number/ Mesh:** enter the number of each gear type being used or if it is a trawler the minimum mesh size of the trawl. For longlines you should record the number of traps or hooks used on the longline you are sampling, the captain will provide this information. For pole and line vessels please count the number of poles being used during your sample period and record these.
- **Bottom depth (m):** enter the depth of the sea bed at the position when the gear is set in meters.
- **Gear depth (m):** enter the depth of the gear in meters. For trawls this is the headline depth, for longlines the depth of the hooks or traps or an average if various depths are used. The captain will advise you on this.

CATCH INFORMATION:

This section should be completed after you have sampled. You should complete it with the help of the factory foreman or the captain. Estimates of catch are acceptable, remembering that you are estimating the catch of the **fishing event you sampled, not the total for the whole day**. You have space to record 13 different species.

- **Species:** enter in these boxes the code of any species you can identify in the catch.
- **Total Catch:** Record the total catch of each species that you observed in the catch. It is better if you can estimate as many species as possible, but there should at least be estimates for the target species and then 'other' species. Put the weight in kilograms: 1 tonne = 1,000 kilogram's, and remember to use whole round weights.
- **No sampled:** Enter the number of fish which you sampled; you can read this from the forms you complete.
- **Weight Sampled:** If you have scales to weigh the fish, record the weight you sampled in kilograms.
- **Forms Used:** Record which of the second level forms you used for each species. If you did not sample any of the by-catch just leave this blank.

TABLES

The following are examples of the type of information that the tables need to contain:

Table 1: Wind Direction

Direction the wind is coming from	Code
North	N
North - East	NE
East	E
South - East	SE
South	S
South - West	SW
West	W
North - West	NW

Table 2: Beaufort Scale for Wind Speed

Description of wind speed	Speed (Knots / hr)	Beaufort Scale	Code
Calm or light air	0-3	0-1	0
Gentle breeze	4-10	2-3	2
Moderate/fresh breeze	11-21	4-5	4
Strong breeze or near gale	22-33	6-7	6
Gale or strong gale	34-47	8-9	8
Storm	48-63	10-11	10
Hurricane	64-118	12-13+	12

Table 3: Sky Cover

Description of sky cover	Code
Clear sky - no clouds or fog	CL
Partly cloudy or foggy	PA
Total cover of the sky by clouds or fog	TO

Table 4: State of Sea

Description of Sea State	Mean wave height (m)	Maximum height (m)	Code
Sea like a mirror	0-0.1	0.1	0
Wavelets	0.2-0.6	1.0	2
Small or moderate waves	1.0-2.0	2.5	4
Large waves	2.0-4.0	5.5	6
High Waves	5.5-7.0	10.0	8
Very high waves	9.0-11.5	16.0	10
Air filled with foam	12.5	-	12

Table 5: Colour of Sea

Description of sea colour	Code
Brown	BR
Green	GR
Blue	BL

Table 6: Gear Type

Description	Code
Bottom Trawl	BT
Pelagic Trawl	PT
Semi-Pelagic Trawl	ST
Bottom Longline (with hooks)	BL
Floating Longline (with hooks)	PL
Trap Longline	TL
Loose Traps	TR
Pole and Line	PO
Bottom Net	BN
Drifting Net	PN
Other (please describe in trip report)	OT

2. OBSERVER GUIDELINES FOR COMPLETING SAMPLING FORM B

This form is used for sampling individual fish in a station when only lengths are recorded.

- Up to 200 fish can be recorded on one form, 100 on the front and 100 on the back.
- Normally you would not sample more than 200 fish of the same species but if you do you can use more than one form per station.
- Different species can be recorded on the same form.
- You should use a new form for each new station.
- The fields underlined are essential, these fields **must be completed**. The others you complete if you can obtain the information.

FOR OFFICE USE:

- This information is required for office use and does not need to be completed by observers.
- The first block of fields is to link this form to the form A that you complete, therefore it is vital that the header information is completed accurately.
- **Vessel ID:** enter the code of letters or letters and numbers or name which identify the vessel.
- **Trip No:** enter the trip number for the vessel.
- **Station No:** Enter the station number that you are sampling.
- **Date:** enter the date in **dd/mm/yy** format.
- **First Sampler No:** Record the Number of the first sampler or observer.

The fish data is then completed:

There are boxes numbered 1 to 100, on the front of the form and another 100 on the back. Enter the:

- **Species code:** in the left hand column.
- **Length:** Record the length of that fish in this column, to 1cm below.

3. OBSERVER GUIDELINES FOR COMPLETING SAMPLING FORM C

- This form is used for sampling fish for length only, it captures the same information as form B.
- You should complete as many forms as are required.
- You should use a new form for each new station and each new species.
- The two columns are for the same fish species when the size range is greater than 40cm.
- The fields underlined are essential, these fields **must be completed**. The others you complete if you can obtain the information.

FOR OFFICE USE:

- This information is required for office use and does not need to be completed by observers.

The first block of fields is to link this form to Form A; therefore it is vital that the header information is completed accurately.

- **Vessel ID:** enter the code of letters or letters and numbers or name, which identify the vessel.
- **Trip No:** enter the trip number for the vessel.
- **First Sampler No:** Record the Number of the first sampler or observer.
- **Date:** enter the date in **dd/mm/yy** format.
- **Station No:** Enter the station number that you are sampling.

The fish data is then completed:

- **Species code:** Enter the species code for the fish you are sampling.
- **Length:** In front of the pre-printed numbers add a number to indicate the tens.
- **Tallies:** Complete each row with a length class.

- **Total:** At the end of your station sum the tallies to find the total number of fish per size class.
- **Total Number:** Sum the length class totals to find the total for that species.

4. OBSERVER GUIDELINES FOR COMPLETING SAMPLING FORM D

- This form is used for sampling individual fish in a station when biological samples are taken.
- You should complete as many forms as are required and this form can be used in conjunction with other forms, there is space to record up to 80 fish on this form 40 on each side.
- You should use a new form for each new station.
- If you only record the length and sex of each fish just complete these columns, you are not required to complete all the columns.
- The fields underlined are essential, these fields **must be completed**. The others you complete if you can obtain the information.

FOR OFFICE USE:

- This information is required for office use and does not need to be completed by observers.

The first block of fields is to link this form to Form A; therefore it is vital that the header information is completed accurately.

- **Vessel ID:** enter the code of letters or letters and numbers or name, which identify the vessel.
- **Trip No:** enter the trip number for the vessel.
- **Date:** enter the date in **dd/mm/yy** format.
- **Station No:** Enter the station number that you are sampling.
- **First Sampler No:** Record the Number of the first sampler or observer.

The fish data is then completed:

There are boxes numbered 1 to 80, to record up to 80 fish per form, therefore you may require more than one form per station. Enter the:

- **Species code:** in the left hand column.
- **Length:** Record the length of that fish in this column, to 1cm below.
- **Sex:** Record the sex of the fish - M=male, F=Female, J=Juvenile, U=unknown.
- **Maturity:** Record the maturity level on the scale appropriate to the species you are sampling.
- **Total Weight:** Record the total weight in grams of the whole fish.
- **Gutted Weight:** Record the gutted weight in grams of the fish.
- **Gonad Weight:** Record the weight of the gonads in grams.
- **Sample Type:** If a sample is taken such as otoliths, stomachs, scales, or so forth record the type of sample in this box. Code to identify the sample: Vessel ID / Trip No / Station No / Form No / Fish No (the number in the far left column).

5. OBSERVER GUIDELINES FOR COMPLETING SAMPLING FORM E

- This form is used for sampling individual crabs.
- You should complete as many forms as are required, although a commercial sample is usually 60 -the number the form can record.
- You should use a new form for each new station and each new species.
- If you only record the width and sex of each crab just complete these columns, you are not required to complete all the columns.
- The fields underlined are essential, these fields **must be completed**. The others you complete if you can obtain the information.

FOR OFFICE USE:

- This information is required for office use and does not need to be completed by observers.

The first block of fields is to link this form to Form A; therefore it is vital that the header information is completed accurately.

- **Vessel ID**: enter the code of letters or letters and numbers or name, which identify the vessel.
- **Trip No**: enter the trip number for the vessel.
- **First Sampler No**: Record the Number of the first sampler or observer.
- **Date**: enter the date in **dd/mm/yy** format.
- **Station No**: Enter the station number that you are sampling.
- **Species code**: Record the 3 letter species code.
- **Width**: Record the width of each crab in millimetres (mm).
- **Sex**: Record the sex of the crab - M = male, F = Female, J = Juvenile, U = Unknown.
- **Berry**: Record if the crab is berried or not - Y = Yes, N = No, U = Unsure.
- **Shell State**: Record one of the 2 letter codes to represent the state of the shell.
- **Maturity**: Record the maturity level.
- **Weight**: Record the weight of the crab in grams.
- **Sample Type**: If a sample is for whole crabs, tagged crabs or so forth, record the sample type in this box and then identify the: Vessels ID/ Trip No / Station No / Sheet No / Fish No (the number in the far left column).

These guidelines are intended to help those involved in managing fisheries to understand the range of objectives that an observer programme can meet and how these contribute towards the management of a fishery. The importance of scientific, compliance and information outputs is considered in relation to the requirements for developing and implementing management plans.

The guidelines promote the use of observers as agents capable of contributing to many monitoring, sampling and compliance activities required in modern integrated fisheries management. The inputs, requirements and outputs of at-sea fishery observer programmes are presented, focusing on what they are, how they relate to the objectives of a programme and different options on how to develop them. The guidelines conclude with a design and maintenance strategy for an observer programme.

