Assessment Work and Sampling Strategies to be used with Pelagic Longline

IOTC ROS SFO TR16.2

Category: Sampling strategies as a function of the IOTC fishery

[IOTC ROS SFO TR16]

EXERCISE 1:

The vessel sets 112 hook sections (also called baskets) and the Observer counted 6 hooks per section. The Observer monitors the hauling of the entire line (all the hooks). The line breaks during hauling and one (1) hook section is lost. While waiting for the line hauling to re-start, the Observer collects biometrics of SSIs put aside by the crew (1 Green Turtle, 1 White Marlin, 3 Oil fish).

Complete the following table using the information provided:

Number of 'hook sections' set	Number of hooks set	Number of hooks observed during line hauling periods	Sampling strategy used
112			

Answer: Number of hooks set: 672; Number of hooks monitored at hauling: 662; Sampling strategy used: Exhaustive sampling

EXERCISE 2:

The vessel sets 120 'hook sections' (also called baskets) and the Observer counted 6 hooks per section. The Observer uses the function RANDBETWEEN on Excel, to select the 'hook sections' to be monitored for catch during line hauling observation periods. When hauling starts the Observer starts numbering with the first 'hook section' hauled, monitors the 'hook sections' selected and records catch details. The Observer collects catch details and biometrics for specimens caught in non-selected 'hook sections'. Complete the following table using the information provided:

Hook sections selected via RANDBETWEEN function.											
2	10	22	38	42	56	60	73	81	94	105	117

Number of 'hook sections' set	Number of hooks set	N° and % of hooks observed during line hauling periods	Sampling strategy used
120			

Answer - Number of hooks set: 720; N° and % hooks observed: 72 hooks, 10%; Sampling strategy used: Random sampling

EXERCISE 3:

The vessel sets 120 'hook sections' (also called baskets) and the Observer counted 6 hooks per section. When hauling starts, the Observer starts numbering with the first 'hook section' hauled. The Observer monitors 'hook sections' for catch and interrupts line hauling observation periods when there are lots of fish to sample for biometrics. The Observer keeps track of the hook sections monitored for catch and the ones sampled for biometrics. Complete the following table using the information provided.

HOOK SECTIONS SAMPLED FOR BIOMETRICS											
2	10	22	38	42	56	60	73	81	94	105	117

N° of 'hook sections' sampled for biometrics (a)	N° of 'hooks sections' monitored for catch (b)	N° and % of hooks observed during line hauling observation periods (c)	Sampling strategy used (d)

Answer : (a) → 12; (b) → 108; (c) → 648 hooks i.e. 83%; (d) → Adaptative Random sampling.

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EXERCISE 4:

A longliner sets 240 *hook sections* (HS) each with 10 hooks (i.e., 2400 hooks).
Vessel skipper estimates that hauling will take 12 hours. The observer decides to:

- Monitor a total of 80 *hook sections* for catch composition, selected at random intervals along the line;

- Conduct biometric catch sampling of 50 *hook sections* hauled outside of the 'line hauling observation periods';

- Rest or undertake other tasks in the remaining time;

- Follow a work pattern that ensures representative sampling of the line.

N° of 'hook' set	N° and % of hooks observed during line hauling observation periods (a)	N° and % of hooks sampled for biometrics (b & c)		Sampling strategy used (d)
2400				

Answer : (a) → 800 hooks i.e. 33%; (b) → 100; (c) → 500 hooks i.e. 21%; (d) → Systematic sampling.

EXERCISE 5:

The vessel sets 200 hook sections (also called baskets) and the Observer counted 10 hooks per section. The Captain informs the Observer that line hauling should take up to 10 hours. The Observer monitors hauling of the entire line. The Observer interrupts line hauling observation to have breakfast, go for lunch, run to the toilet and to have a drink of water.

Breakfast	Lunch	Other
08:00 to 08:30 (stopped at hook section 20, resumed at hook section 30)	12:30 to 13:30 (from hook section 110, till hook section 130)	09:00 to 09:20 (missed hook section 41); 15:00 to 15:15 (missed hook section 161)

Complete the following table using the information provided.

N° of 'hook sections' set	N° of hooks set	N° & % of hooks observed (line hauling periods)		Sampling strategy used
200	2000			

Answer: 1680 hooks observed, i.e. 84% of the line was monitored; Sampling strategy used: Exhaustive when present sampling

EXERCISE 6:

1. Determine the number of hooks monitored for catch composition. Fill in the table below with available information given.

2. Determine the sampling strategy used (represented in the image below).
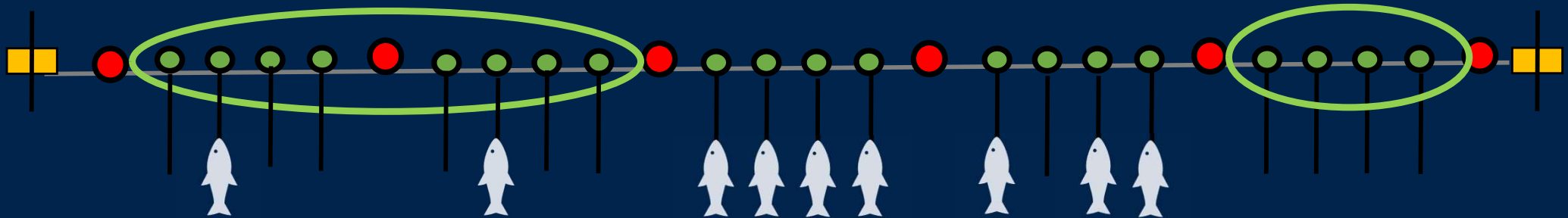
N° of Hooks Sections Set = 5	N° of Hooks set = 20	% Observed
1st Line Hauling Observation Period	(a)	(b)
2nd Line Hauling Observation Period	(c)	(d)
Total hooks observed for catch	(e)	(f)

Answer Q1: (a) → 8 hooks; (b) 40%; (c) 4 hooks; (d) 20%; (e) 12 hooks; (f) 60%. Answer Q2: Adaptative random sample.

EXERCISE 7:

1. Determine catch composition based on the number of fish caught during line hauling observation periods. Complete the table below.

TOTAL HOOKS SET	3500	RAISED TOTAL CATCH PER SPP.
PERCENTAGE (%) OF THE LINE OBSERVED	7,8%	
Oilfish	31	a)
Escolar	24	b)
Green turtle	1	c)
Blue shark	40	d)
Blue marlin	1	e)
Thresher shark	2	f)
Yellowfin tuna	123	g)
Bigeye tuna	22	h)
Hooks with no catch	30	i)

Answer: a) 397; b) 307; c) 13; d) 513; e) 13; f) 25; g) 1577; h) 282; i) 384

ANY QUESTIONS?

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