

Demersal Longline

Set & Haul Information and Catch Composition

INSERT presenter name here



http://www.worldwideseafoods.ca/fleet.html



Trinidad longliner, 2005, FAO Fisheries Technical Paper. No. 482

Data collection priorities

- 1. Estimate effort for each gear deployment;
- 2. Identify every individual caught in subsample and estimate percent retained;
- 3. Collect biological information on target and other identified species as requested;
- 4. Record all sightings and interactions with marine mammals and sea turtles;
- **5.** Record vessel and fishing gear characteristics.

Objectives

List 8 elements on the Set & Haul Information form and describe how each is collected

- Define fishing effort
- □ Describe the catch composition sampling process
- □ List 3 pieces of equipment needed on deck
- Demonstrate ability to select and describe one random sampling procedure
- Demonstrate ability to complete the Set & Haul Information (incl. calculation of Total Catch) and Catch Composition forms

1 per set
 Fishing effort – time & amount of gear fished
 Catch per unit effort (CPUE)



Bait	Light devices
Species kg	Type codes (circle one) 0 None 3 Glow bead 1 Chemical light stick 4 Other
	2 Battery light How many? Placement
Gear condition Codes 0 - No problems (<10% lost)	Color Code % 1 - White 6 - Red 2 - Pink 7 - Clear 3 - Black 8 - Orange 4 - Green 9 - Yellow 5 - Blue 10 - Other
Other devices? TDRs Hook timers	Other
Comments	

Gear condition Output Gear Condition Codes Output Color Code % Gear parted Y/N Output Output	Bait Species kg	Light devices Type codes (circle one) 0 None 3 Glow bead 1 Chemical light stick 4 Other 2 Battery light How many? Placement
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Comments	Other devices? TDRs Hook timers	Other
	Comments	

Total Catch Estimation

Total catch must be estimated for every set.
Weigh entire catch (method 1)
Captain / vessel estimate (method 5)
Catch / effort ratio (method 6) - unsampled

 $\frac{\Sigma \text{ Sample weights from similar sets}}{\Sigma \text{ Tallied hooks from similar sets}}$

X Total hooks in unsampled set

□ Catch / effort ratio (**method 7**) – tally sample

Sample weight (kg) Hooks in sample

X Total hooks in set

Questions on Set & Haul information?
 Practice exercise
 Groups of 2

Comments

Total catch = (1395.67/1800) *3000 = 3494.175 kg ≈ 3.49 MT Hooks/section = $597/10 = 59.7 \approx 60$ Ave gangion length: 11.93 / 30 = 0.397667

Catch Composition

Multiple sets/day – how to choose?
 Observer logbook
 Sets/day Random sample table (RST)

 1-2 None – Sample all sets
 3-4 RST#1
 F+ RST#2

Catch Composition

□ Tally sample (ST=4)

 Count all individual species as they come out of water

Separate tally for discard/dropped

How much to sample? 1/3 to ½ of hooks deployed

Catch Composition

Selecting gear for tally sample

- Systematic spatial with random start *Preferred
- Random spatial
- Systematic temporal
- Random temporal

Catch along bottom can be highly variable

Observer code	Vess	el code	Trip I	D	Date	(dd/mm/yy	/) Haul		Mixed? Y / N
Sample Type (ST)	3A Shr	mp trawl -	retained by specie	es 4	LL-de	emersal	Reason Di	scard	
1 Whole haul	3B Shr	imp trawl -	retained mixed sp	ecies 5	Gillne	et	1 Regu	lation 4	Error
2 Unsorted random	3C Shr	imp trawl -	discard sample	7	Pots/	traps	2 Mark	et 5	Other
				8	Other	r	3 Dama	age	
Species Name	Code	ST	Number	Weight		Samp	le Size	% Ret.	Reason Discard

Observer code	Vesse	code	Trip II	D Date	(dd/mm/yy	/) Haul		Mixed? Y / N
Sample Type (ST) 1 Whole haul 2 Unsorted random	3A Shrir 3B Shrir 3C Shrir	np trawl - np trawl - np trawl -	retained by specie retained mixed sp discard sample	ecies 5 Gillne 7 Pots/ 8 Othe	4 LL-demersal Re 5 Gillnet 7 Pots/traps 8 Other			4 Error 5 Other
Species Name	Code	ST	Number	Weight	Samp	le Size	% Re	Reason Discard

Observer code		Vessel	code		Trip IC)	Date	(dd/mm/y	у)	Haul		Mixed? Y / N
Sample Type (ST)	3A	Shrin	np trawl -	retained by s	pecie	s 4	LL-de	emersal	Reaso	on Di	scard	
1 Whole haul	3B	Shrin	np trawl -	retained mixe	d spe	ecies 5	Gillne	et	1	Regu	lation	4 Error
2 Unsorted random	3C	Shrin	np trawl -	discard samp	le	7	Pots/	traps	2	Mark	et	5 Other
						8	Othe	r	3	Dama	age	
Species Name	Co	ode	ST	Numbe	r	Weight		Samp	ole Siz	ze	% Ret	Reason Discard

Observer code		Vessel code Trip ID		Vessel code Trip ID Date (dd/mm/yy			y)	Haul		N	/lixed? Y / N		
Sample Type (ST) 1 Whole haul 2 Unsorted random	3A 3B 3C	Shrin Shrin Shrin	Shrimp trawl - retained by species 4 LL-demersal Reason Disca Shrimp trawl - retained mixed species 5 Gillnet 1 Regulati Shrimp trawl - discard sample 7 Pots/traps 2 Market						scard lation et	4 Error 5 Other			
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Species Maille		oue	51	Numbe		weight		Sam	ле эн	26	70 RC	ι.	Discard
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Observer code		Vessel	code		Trip ID		Date	(dd/mm/y	y) H	Haul		Mixed? Y / N
Sample Type (ST) 1 Whole haul 2 Unsorted random	3A 3B 3C	Shrin Shrin Shrin	Shrimp trawl - retained by species Shrimp trawl - retained mixed species Shrimp trawl - discard sample					LL-demersal Reason Discard Gillnet 1 Regulation Pots/traps 2 Market 3 Other 3 Damage			ation et ge	4 Error 5 Other
Species Name	Co	de	ST	Numbe	r	Weight		Sam	ple Siz	e	% Ret.	Reason Discard

Activity

 Questions on catch composition sampling / random sampling or the form?
 Activity #2

- Groups of 2
- Assigned a sample type
- Design how you will sample a set with 12 gear units of 50 hooks
- Tally sample & complete Catch Comp form

Tally Sampling Activity

Key to "symbols"

Tally Sampling Activity Key to "symbols"

Activity

Did you have any trouble keeping up with the tally?

- □ What were your total catch estimates?
- How does it compare to actual total weight of 816.49 kg?
- □ Why do you think there are differences?

Summary

- List the elements on the Set and Haul Information form and describe how each is collected
- □ How is fishing effort defined?
- □ What are four ways to collect a random sample?
- Describe the catch composition sampling process for demersal longlining
- What gear is needed on deck for catch composition sampling