

Pelagic Longline Catch Composition



Image: www.fpir.noaa.gov/OBS/obs_american_samoa.html

Data Collection Duties

- 1. Estimate effort for each gear deployment;
- 2. Identify every individual caught and assess catch condition and fate;
- 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

- Describe the catch composition sampling process for pelagic longlining
- Describe 2 situations when you can modify the standard catch composition sample
- List 3 pieces of information that must be collected from every animal caught
- List 3 types of gear needed on deck for catch composition sampling
- Demonstrate ability to complete the Catch Composition form

Catch Composition form

1 per set
For each fish, record
Species code (lowest taxonomic level)

- Condition
- Kept/return

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Catch Composition Form

Hook number assigned based on direction of gear deployment



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Damage – Marine mammal (usu. toothed whale) often only head remains Widely spaced tooth punctures Often on multiple fish Jagged bite edges



Images: Chapman et al. 2006

Damage – Cookie cutter



circular / oval – clean edges



Images: Chapman et al. 2006

Damage – other Shark



- Large bites; few long strips of tissues
- Gouge marks from individual teeth – look more like lacerations
- Frequently multiple bites

Images: Chapman et al. 2006

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Straight



VS.

'

Curved lengths



Length Rule of Thumb (primary measurements)

Swordfish and billfish – lower jaw to fork length, curved (type 05C)

- Tunas & most other fish straight fork length (type 01S)
- Sharks stretched total length (type 13S) or fork length (type 01S)







Length Rule of Thumb (primary measurements)

Rays – total length (type 02S)

suborder Myliobatoidei - disc length to pelvic fin (type 14S)





Observer co	de		Vessel code			Trip ID			Set No.						Page	of		
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Issue	Alternative
Too many fish to keep up	Reduce number of sexed lengths
Rough seas / seasick	Cease measurements but still try to watch
Hunger / toilet	Select a random subsample

Catch Composition Form

Questions on catch composition sampling?
Practice exercise
Groups of 2
Same vessel, observer, tripID, set # used in Set & Haul Information Exercise

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16	skipjack	SKJ	A1	κ		u	01 5	78									
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20	Blue shark	₿SĦ	A1	κ		м	01 5	45									

Comments (reference by number in comments box):

1 ~ Fish released before landing. Estimated lower jaw to fork length at 2.5 meters

Summary

- Describe the catch composition sampling process for pelagic longlining
- List 3 pieces of information that must be collected from every animal caught
- when you can modify the standard catch composition sampling protocol and describe the modification for each

Summary

What sort of equipment do you think you will need for catch composition sampling on pelagic longline vessels?

- Foul weather gear
- Clip board & deck sheets
- Pencils
- Measuring tape
- Tally (thumb) counters



- Brogan, D., S. Fukofuka, and P. Sharples. 2006. Longline Observer Guide. Secretariat of the Pacific Community Oceanic Fisheries Programme, Noumea, New Caledonia.
- Chapman, L., P. Sharples, D. Brogan, A. Desurmont, S. Beverly, and W. Sokimi. 2006. Marine species identification manual for horizontal longline fishermen. Secretariat of the Pacific Community, New Caledonia.
- NMFS. 2008a. American Samoa Observer Program Manual. Pacific Islands Regional Office, Sustainable Fisheries Division
- PIRO. 2009. Hawaii Longline Observer Program Observer Field Manual. Pacific Islands Regional Office, NMFS, Honolulu, HI.
- Southeast Fisheries Science Center. 2007. Pelagic Observer Program Observer Manual. Pelagic Observer Program, Miami, FL.
- SPC. 2007. SPC/FFA Scientific Observer forms. Secretariat of the Pacific Community and Forum Fisheries Agency.