Homework 2 –Trawl Effort / Total Catch form

(15 Jan 2012)

Name:

Complete the blank Trawl Effort / Total catch form and attached logbook pages using the following information.

You board the Observer code: XY499, Vessel code: LIB234, Trip #38

Your vessel is fishing with two nets deployed on the port and starboard and is targeting shrimp on sandy bottom.

You board the boat early in the morning (~0600) in Monrovia (N6° 18' 48" W010° 48' 5") on July 2, 2011. You depart port at 11:15 on July 4.

The first tow started on July 5 at 0400. You were still sleeping but the vessel crew recorded the deployment position – N6° 16.3' / W13° 22.34' – and starting bottom depth (65 feet). You record the end position at 0835 which was N6° 16.91' W13° 23.14'. The end depth was 80 feet. Towing speed was consistently 2.1 knots (all hauls) and you use the captain's estimate of 580 kg since you did not sample.

You had been on this vessel before so after watching one tow, you decide you can start sampling on the 2nd haul. They redeployed the net fairly quickly and you happen to be in the wheelhouse when this occurred so you are able to record the start time/position. The 2nd haul was deployed at 0850 and was back on the bottom fishing by 0856 since the fishing depth was fairly shallow (59 feet). The start position was N6° 16.78' W13° 23.25'. You hang out for a while, eat a snack and get prepared to sample. The mate records the retrieval start time at 1223 in 65 feet of water. The end position was N6° 16.12' W13° 21.43'. As part of your catch composition, you weigh (or monitor the weighing of) all of the retained catch which was 269.3 kg. There were only 4 baskets of discard so you decide to weigh it all as well – 22.4, 20.9, 21.1, 20.8 kg.

On the third haul, the captain decides to change the output on the depth sounder from feet to meter units. Since you were out on deck sampling, you did not record the start position but you did note the time the net went back overboard (1345). You finish your sample & go to the wheelhouse to get the start position/depths and you realize the captain forgot to record the position in his vessel logbook. You've observed that it takes about 5 minutes for the gear to get to fishing depth once it goes overboard. You go to the galley to work on your paperwork until the next retrieval. The gear comes off the bottom at 1805 and is on board by 1815. The captain remembers to record all of the information which you later copy: N6° 15.92' W13° 10.37', 31 meters. This tow was a little bigger. You monitor the weighing/packing of all retained catch. This time you count the number of cartoons for each species which you'll need for your composition sample. There were 28 cartoons in total and the average weight of cartoons was 20.15 kg. There were also 15 baskets of discards. You collected the following weights for an average: 15.3, 16.4, 15.7, 15.9, 16.0 kg.

The captain records the following information for the 4th haul: time-1900, N6° 15.10' W13° 9.22', 29 meters. You're on the bridge when the haulback occurs so you record the end haul information: 0003 (the next day), N6° 14.76' W13° 8.92', 25 meters. You proceed to deck to

sample. As part of your catch composition, you weigh (or monitor the weighing of) all of the retained catch which was 192.1 kg. There were only 10 baskets of discard and you weigh a subsample – 21.4, 20.7, 21.0, 20.3 kg.

You are not sampling the 5th haul because you need to get some sleep. Based on the catch and production information you see in the vessel logbook, it looks like this haul was similar to hauls 2, 3 and 4 so you use these to find a catch/effort ratio for calculating your total catch estimate. The start time/position/depth was: 0050, N6° 14.54' W13° 8.73', 25 meters. The end time/position/depth was: 0515, N6° 14.0' W13° 8.08', 24 meters

You were still sleeping when the 6th tow went in the water. The start time/position/depth was: 0555, N6° 13.90' W13° 7.95', 24 meters. The crew woke you up 15 minutes prior to the haulback so you were able to record the end time/position/depth: 1123, N6° 13.23' W13° 7.45', 22 meters. This haul is so large you use a bin volume. There are two rectangular bins with the following dimensions. Bin #1: 2.27m, 1.95m, 0.45m; bin #2: 2.35m, 1.95m, heights(0.3, 0.35, 0.43, 0.48m). Using the basket dimensions from the manual (Section 6.6), your density weight samples were: 22.5, 21.75, 24.1, 23.5 kg.

You use the vessels information for the deployment of the 7th tow. The start time/position/depth was: 2:35 pm, N6° 13.00' W13° 6.83', 21 meters. Everything seems to be going well but at 1500 the starboard main cable parts and the starboard net is lost. The captain immediately starts the retrieval of the port net. You manage to record the position & depth: N6° 12.92' W13° 6.55', 20 meters. There's a lot of activity on deck but you manage to see that there was virtually no catch in the port net. You weigh it all as part of your catch composition sample and it weighted 3.5 kg. Since the vessel has no spare on board, they begin steaming to port.

Add the following to Appendix 10 of your manual:

1 foot = 0.305 m	1 pound =0.4536 kg
1 m = 3.28 feet	1 kg = 2.2046 pounds

Haul #: **1** Total catch WT:	Total Weight Calculation
Density/Other Calculations	

Haul #:**2** Total catch WT:	Total Weight Calculation
Density/Other Calculations	
Haul #:**3** Total catch WT:	Total Weight Calculation
Density/Other Calculations	
Haul #:**4** Total catch WT:	Total Weight Calculation
Density/Other Calculations	

Haul #:**5** Total catch WT:	Total Weight Calculation
Density/Other Calculations	
Haul #:**6** Total catch WT:	Total Weight Calculation
Density/Other Calculations	
Haul #: Total catch WT:	Total Weight Calculation
Density/Other Calculations	

Trawl Effort / Total Catch

Observer code	Vessel code	Trip ID

							Date/Time				Position												
Haul	Total nets	Gear Perf	Sampled?	Target	Substrate		Day	Month	Year	Time (24-hr)	Lat-Deg	Lat-Min	Lat-N/S	Long-Deg	Long-Min	Long-E/W	Depth, bottom (m)	Depth, fishing (m)	V / O	Speed (knots)	Retained catch (mt)	Total Catch Est. (mt)	Method
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Gear performance codes:
1. No problem
2. Door- and warp-related problems
3. Net not fishing (bogged, obstructed, bag untied, torn, etc)
4. Net lost
5. Other

Target:
S – Shrimp **F** – Fish
Substrate:
M – Mud **S** – Sand
R – Rocky **C** – Corals
CM – Corals & mud
CMS – Corals, mud & sand

Total Catch method:
1. Weigh entire catch
2. Weigh subsample & extrapolate to total count (basket, cartoon)
3. Volumetric estimate: Bin or codend
4. Catch / effort ratio
5. Captain / Vessel estimate
9. Other
10. Unable to obtain Total Catch estimate

Trawl Effort / Total Catch

						Date/Time				Position													
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