

Table 1. Depth and location information for camera sled stations analyzed for red crab densities in 1974 and digitized in 2011. The beginning depth for station 67 is apparently an estimate.

Station	No. images digitized	Depth (m)	Start lat.	Start lon.	Comments
2	192	357-366	39°58.0	-70°59.0	
5	0	823-841	39°51.5	-70°59.0	B&W negative
6	218	1079-1097	39°49.0	-70°56.0	
7	0	1463-1463	39°46.0	-71°04.0	B&W negative
8	0	256-256	39°35.0	-72°02.0	B&W negative
10	358	454-476	39°33.0	-71°57.5	B&W negative
11	351	549-549	39°33.0	-71°57.0	
13	423	311-326	39°14.0	-72°23.0	
14	442	366-384	39°14.0	-72°21.0	
15	416	457-466	39°15.0	-72°18.0	
16	430	530-530	39°14.0	-72°16.0	
17	364	713-732	39°12.0	-72°16.5	
18	230	1051-1079	39°10.0	-72°13.0	
21	420	393-412	38°12.0	-73°39.5	
22	400	274-274	37°56.3	-73°55.5	
27	418	439-494	39°55.0	-70°23.0	
28	440	585-640	39°53.0	-70°25.0	
29	110	521-732	39°53.0	-70°23.5	
30	330	274-284	39°55.5	-69°32.0	
31	438	366-457	39°55.0	-69°22.0	
32	38	457-503	39°55.2	-69°22.0	
33	400	603-622	39°55.0	-69°18.5	
38	427	348-439	40°05.2	-68°43.5	
39	420	430-448	40°04.0	-68°41.5	
40	368	284-293	40°30.0	-68°08.5	
41	364	357-512	40°29.0	-67°08.5	
45	306	210-293	40°45.5	-66°45.5	
46	378	357-366	40°46.0	-66°41.0	
59	340	256-265	39°55.5	-69°53.0	
60	433	402-421	39°54.0	-69°48.5	60 and 60A combined
62	420	558-576	39°52.5	-69°44.0	62 and 62A combined
63	116	750-768	39°51.0	-69°44.0	
67	440	~412-960	39°43.0	-71°46.0	

Table 2. Digital scan of comments on each individual tow. The column "type" refers to the size of the film; either 35 or 70 mm. All the images used for estimating red crab density were 70 mm. "R.C." stands for red crab, "L" is for lobster and "J.C." is for Jonah crab.

Films Analyzed  
Alb. IV - 74-7

STA.	Tow	Type	No. of frames	Comments
2	1	70		
3	1	35		Only 6 good shots in middle - no crabs.
3		70		Data card says 2A - No shots
3A	2	70		1 u.w. shot - no crabs - rest blank (side tow)
4	1	70		No shots - upside down?
6	1	70		OK
7	1	70		OK
12	1	35		No shots
13	1	70		Good shots - Red crab - Lobster - Jonah crabs etc.
14	1	70		Very int. bottom disturbance
15	1	70		Good shots - R.C. - J.C. etc.
16	1	70		Good R.C. - Anemones (feeding of R.C.?)
17	1	70		Not too many crabs.
18	1	70		Begins on side. ends on side. Good in bet.
19	1	70		Towed entirely on side - some fauna!
21	1	70		Many red crabs - fuzzy tho.
22	1	70		Many Hyalinocera - J.C. - Lobster - NO R.C.
23	1	70		Only 8 frames @ end - Upside down?
26	1	70		No shots - only fouled polyprop. line - on side!
27	1	70		Good R.C. area - fishes etc.
28A	1	70		Good R.C. area - " "
29	1	70		Few frames but good R.C. - 1 fr. E 4.
30	1	70		Very Fuzzy R.C. - L - J.C.
31	1	70		Very good for R.C. - L - J.C.
32	1	70		Few frames @ R.C. - mostly on side or back

Table 2 continued.

Fishes Analyzed

STA.	FOV	Type	No. of frames	Comment
33	1	70		Very good for R.C. @ begin. - reasonably sharp. does much rolling gets very fuzzy. (good under w/ by loose focus)
34	1	35		Short length, only water shots except 10 at end, but all of same area.
37	1	70		All water shots. - side or top?
38	1	70		Excellent for R.C. - J.C. - Rocks - boulders, pebbles cobbles etc. Numerous.
39	1	70		Good evidence of tumbling - Good R.C. - Fuzzy
40	1	70		Very fuzzy - some R.C. - Rocks.
41	1	70		Very fuzzy - Some R.C.
45	1	70		" " Very few R.C.
46	1	70		Very fuzzy to sharp. - Few R.C.
59	1	70		Very boring bottom - Few of anything. Some R.C.
60	1	70		Good for R.C. but fuzzy
60A.	1	70		V. Good for R.C. - fuzzy.
61	1	70		No shots - all side or top.
61A	2	70		No shots - all side or top
62	1	70		Some obscuration but v.g. for R.C.
62A	2	70		Many 2-3-4-5 dbl. exposures but good R.C. data
63	1	70		Short roll - good focus. + R.C. + fishes
64	1	35		a Very few good shots - mostly water - 1 R.C. no data on area yet.
65	1	70		Only 8 poor eggs. No R.C.
66	1	70		No shots. - Fouled old mill - all water shots
67	1	70		Very fuzzy - Good for R.C.
68	1	70		Useless - all on side + short length -

Table 3. Exponential visibility model estimates for deep-sea red crab counts by zone for three stations from the 1974 survey with sensitivity analyses to measure bias in density estimates due to escape behavior. Patil et al.'s estimates are in column 2. Column 3 shows recalculated density, predicted counts and negative log likelihoods (NLL) based on Patil et al.'s estimates. Column 4 shows estimates when the model was refit using Patil et al.'s methodology. Columns 5-10 are sensitivity analyses in which the indicated proportions of original counts were moved from one zone to the next to simulate escape behavior.

Statistic or zone	Original figures from Patil et al.	Recalculate using original parameters	Refit original models	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6
<i>Avoidance parameters (% moving to next zone)</i>									
Zone 1 to 2	0%	0%	0%	5%	10%	15%	20%	20%	20%
Zone 2 to 3	0%	0%	0%	0%	5%	10%	15%	15%	15%
Zone 3 to 4	0%	0%	0%	0%	0%	5%	10%	10%	10%
Zone 4 to 5	0%	0%	0%	0%	0%	0%	5%	5%	5%
Zone 5 to outside (lost)	0%	0%	0%	0%	0%	0%	0%	50%	100%
<i>Station 16</i>									
Lambda	0.208	0.208	0.207	0.203	0.198	0.183	0.167	0.271	0.390
Density (n/hectare)	150.0	149.7	149.5	146.3	142.7	132.7	122.8	158.2	189.1
Percent bias in density relative to reestimated models				-2%	-5%	-11%	-18%	6%	26%
Predicted N by zone									
1	10.7	10.7	10.7	10.6	10.4	10.1	9.7	11.1	12.8
2	22.5	22.6	22.5	22.4	22.2	21.7	21.2	22.1	22.8
3	22.6	22.6	22.6	22.6	22.5	22.4	22.3	20.5	18.3
4	21.5	21.5	21.5	21.6	21.7	22.0	22.3	18.0	13.9
5	19.7	19.7	19.7	19.9	20.1	20.8	21.5	15.3	10.2
NLL	na	153.39	153.39	152.64	152.63	151.87	151.89	135.75	118.88
<i>Station 21</i>									
Lambda	0.425	0.425	0.836	0.820	0.770	0.717	0.662	0.756	0.813
Density (n/hectare)	307.0	306.6	642.8	628.1	582.1	534.6	487.6	526.3	533.7
Percent bias in density relative to reestimated models				-2%	-9%	-17%	-24%	-18%	-17%
Predicted N by zone									
1	21.0	21.0	38.8	38.1	35.9	33.5	31.0	32.6	32.4
2	36.3	36.4	46.2	46.0	45.3	44.4	43.3	41.7	39.4
3	28.0	27.9	21.5	21.8	22.8	23.9	24.9	21.4	18.8
4	20.4	20.4	9.5	9.8	10.9	12.2	13.6	10.4	8.6
5	14.4	14.4	4.1	4.3	5.1	6.0	7.2	4.9	3.8
NLL	na	-27.08	-28.50	-28.55	-28.22	-27.77	-27.33	-26.85	-26.53
<i>Station 67</i>									
Log lambda		-1.109	-1.112	-1.124	-1.158	-1.209	-1.279	-0.935	-0.626
Lambda	0.330	0.330	0.329	0.325	0.314	0.299	0.278	0.393	0.535
Density (n/hectare)	192.0	192.2	191.7	190.0	185.0	178.0	169.3	199.7	242.2
Percent bias in density relative to reestimated models				-1%	-3%	-7%	-12%	4%	26%
Predicted N by zone									
1	14.2	14.2	14.1	14.0	13.7	13.3	12.7	14.5	16.8
2	26.7	26.8	26.8	26.6	26.3	25.8	25.1	25.8	26.3
3	23.1	23.1	23.1	23.1	23.1	23.1	23.1	20.6	17.7
4	19.0	18.9	19.0	19.0	19.3	19.7	20.1	15.6	11.3
5	15.0	15.0	15.0	15.2	15.6	16.2	17.0	11.5	7.0
NLL	na	158.15	158.15	157.58	157.17	156.89	156.70	137.67	117.69
Total NLL		284.46	283.04	281.66	281.58	280.99	281.25	246.56	210.03

Table 4. Dimensions and calculations for the area of each zone used by Patil et al. to analyze data from the 1974 deep-sea red crab survey. The near border of a zone is the edge parallel and nearest to the sled. The far border parallel and furthest from the sled. Distances to borders are measured perpendicular to sled runners from the near border of Zone 1. Widths are distances measured parallel to sled runners along the border of zones.

Parameters used to calculate area of zones (Patil et al., p. 54 and Fig.2 on p. 55)								
a	2.868							
b	0.961							
H	5.490	<- For documentation only, not used here.						
Zone dimensions and areas								
Zone	Height	Dimensions						Area
		Distance to near border	Distance to far border	Distance to middle	Width near border	Width far border	Width middle	
1	0.61	0.00	0.61	0.31	2.87	3.45	3.16	1.93
2	1.22	0.61	1.83	1.22	3.45	4.63	4.04	4.93
3	1.22	1.83	3.05	2.44	4.63	5.80	5.21	6.36
4	1.22	3.05	4.27	3.66	5.80	6.97	6.39	7.79
5	1.22	4.27	5.49	4.88	6.97	8.14	7.56	9.22
							Total	30.23

Formula for area of a trapezoid (Wikipedia)

