Av. No. & WT Food Items per fish by Size Class April 83

AV WT HA =
IS =
NM =
CO =

Av No prey / fish — Tote X10 Av. wt (μg) / fish

x̄
σ

		1	5	4	2	3	1	5	2	3	4
FS	N	HA	CO	AM	NM	IS	HA	CO	AM	NM	IS
9	10 2.228	17.8 11.80	0.4 0.70	0.3 0.149 0.67	0.5 0.85	0.3 0.48	30.26 20.06	1.2 1.48 2.1	2.88 8.32	0.95 1.14 1.62	1.35 1.52 2.16
12	13 2.16	46.23 30.61	1.77 3 3.85	1.15 0.29 1.77	8.23 2 11.49	0.54 0.78	78.59 52.04	5.31 6.92 11.55	2.15 3.31	15.64 13.08 21.83	2.43 2.1 3.51
15	11 2.201	54.09 41.95	3.18 3 6.82	2.27 0.46 2.28	10.55 2 9.34	4.18 4 10.60	91.95 71.32	9.54 13.58 20.46	25.43 37.35	20.05 11.78 17.75	18.81 31.65 47.7
18	10 2.228	16.80 16.57	0.8 4 1.14	1.8 0.50 2.25	2.1 2 4.01	0.2 5 0.42	28.56 28.17	2.4 2.41 3.42	20.71 36.77	3.99 7.62	0.9 1.89
21	10 2.228	15.30 12.68	1.0 1.89	3.00 0.64 2.87	0.7 1.34	0.8 1.23	26.01 21.56	3.0 3.99 5.67	128.75 184.33	1.33 2.55	3.6 5.54
24	21 2.080	5.67 6.19	1.33 3.23	2.29 0.2 2.00	0.29 1.10	0.57 0.81	9.64 10.52	3.99 4.39 9.69	133.49 164.41	0.55 2.09	2.565 3.65
27	12 2.179	4.00 5.44	0.25 0.62	2.33 0.45 2.50	0.0 0.0	0.33 0.49	6.80 9.25	0.75 1.17 1.86	227.42 232.46	0.0 0.0	1.48 2.21
30	11 2.201	2.36 3.01	2.55 4.22	1.45 0.24 1.21	0.18 0.60	0.72 1.49	4.01 5.12	7.65 8.40 12.66	47.51 75.59	0.34 1.14	3.24 6.70

Size frequency of prey Apr 83 – harpacticoids, copepods, amphipods, isopods expressed as a % using total numbers in each gp.

FISH	.3	.5	.7	.9	1.1	1.3	1.5	1.7	1.9	2.1	2.3	2.5	2.7	2.9	3.1	3.3	3.5	3.7	3.9	4.1	4.3	4.5	4.7	4.9	5.1
9	62.79	31.98	4.07	0.56	0.56																				
12	55.34	39.97	3.56	0.81	0.16	0.16																			
15	? 50.94	33.71	6.37	0.99	0.57	0.42	0.28	0.28	0	0	0.14	0.28													
18	45.17	41.12	5.58	3.55	1.52	0.51	0	1.02	0.51	0	0.51	0.51													
21	49.04	31.25	5.77	3.85	1.92	1.44	0.48	1.44	0	0	0.96	0	0.48	0.48	0.96	0	0.96	0	0	0	0.48	0.48			
24	? [illegible]	33.48	17.43	3.67	1.38	1.38	0.92	0.46	0.92	0	1.38	1.38	0	0.46	1.83	1.83	0	0.46	0	0.46	0.46	0.92	0.92	0.46	
27	40.24	21.95	6.09	3.66	1.22	1.22	1.22	2.44	2.44	3.66	0	0	1.22	2.44	1.22	0	0	1.22	1.22	2.44	1.22	1.22	1.22	2.44	
30	16.13	22.58	24.19	12.9	1.61	9.68	1.61	0	3.22	1.61	3.22	0	0	1.61	0	0	0	0	0	0	0	1.61			

Prey-size distribution in guts Apr 83 of harpacticoids, copepods, amphipods and isopods.

Total numbers in each size group

FISH SIZE		.3	.5	.7	.9	1.1	1.3	1.5	1.7	1.9	2.1	2.3	2.5	2.7	2.9	3.1	3.3	3.5	3.7	3.9	4.1	4.3	4.5	4.7	4.9	5.1	n	$\bar{x}$	σ
9	10	108	55	7	1	1																					172	0.39	0.13
12	13	342	247	22	5	1	1																				618	0.40	0.13
15	11	402	238	45	7	4	3	2	2	0	0	1	2														706	0.42	0.22
18	10	89	81	11	7	3	1	0	2	1	0	1	1														197	0.49	0.31
21	10	102	65	12	8	4	3	1	3	0	0	2	0	1	1	2	0	2	0	0	0	1	1				208	0.60	0.66
24	21	65	73	36	6	3	3	2	1	2	0	3	3	0	1	4	4	0	1	0	1	1	2	2	1		218	0.81	0.93
27	12	33	18	5	3	1	1	1	2	2	3	0	0	1	2	1	0	0	1	1	2	1	1	1	2		82	1.14	1.33
30	11	10	14	15	6	1	6	1	0	2	1	2	0	0	1	0	0	0	0	0	0	0	1				62	0.90	0.72

Selectivity using 1) Strauss Index of Selectivity (L).
of am, co, ha, is 2) Chessen " " " (α)

of fish collected apr 22-26

SIZE / P / F		·6	1·4	2·2	3·0	3·8	4·6
		0·3–0·99	1·0—1·79	1·8—2·59	2·6—3·39	3·4—4·19	4·2–4·99
PREY		91·32	6·57	0·85	0·65	0·4	0·21
	%	98·91	1·09	0	0	0	0
9	L	+7·59	−5·48	−0·85	−0·65	−0·4	−0·21
		0·867	0·133	0	0	0	0
	%	99·68	0·32	0	0	0	0
12	L	+8·36	−6·25	−0·85	−0·65	−0·4	−0·21
		0·957	0·043	0	0	0	0
	%	97·62	1·79	0·44	0·15	0	0
15	L	+6·3	−4·78	−0·41	−0·5	−0·4	−0·21
		0·511	0·130	0·248	0·110	0	0
	%	93·62	4·79	1·06	0·53	0	0
18	L	+2·3	−1·78	+0·21	−0·12	−0·4	−0·21
		0·269	0·191	0·327	0·214	0	0
	%	89·76	4·88	0·98	1·95	0·98	1·46
21	L	−1·56	−1·69	+0·13	+1·3	+0·58	+1·25
		0·064	0·049	0·075	0·196	0·160	0·455
	%	82·28	5·42	3·72	4·29	1·02	3·27
24	L	−9·04	−1·15	+2·87	+3·64	+0·62	+3·06
		0·029	0·027	0·142	0·214	0·083	0·505
	%	69·90	4·78	10·85	3·62	3·62	7·24
27	L	−21·42	−1·79	+10·0	+2·97	+3·22	+7·03
		0·012	0·012	0·197	0·088	0·143	0·547
	%	74·01	14·10	7·93	1·98	0	1·98
30	L	−17·31	+7·53	+6·54	+1·33	−0·4	+1·77
		0·034	0·089	0·360	0·126	0	0·391

Calculation of $r_i n_i^{-1}$ for chosen α.

	1	2	3	4	5	6	Σ
9	1.083	0.166	0	0	0	0	1.249
12	1.092	0.049	0	0	0	0	1.141
15	1.069	0.272	0.518	0.231	0	0	2.09
18	1.025	0.729	1.247	0.815	0	0	3.816
21	0.983	0.743	1.153	3.0	2.45	6.95	15.279
24	0.901	0.825	4.376	6.6	2.55	15.57	30.822
27	0.765	0.728	12.447	5.569	9.05	34.476	63.035
30	0.810	2.146	8.694	3.046	0	9.429	24.125

P1

Size - freq HA, IS, AM in gut APR 22-26

	FISH	SIZE	0.3-0.99	1.0-1.79	1.8-2.59	2.6-3.39	3.4-4.19	4.2-4.99
9	113	8	13	0	0	0	0	0
	116	8	11	0	0	0	0	0
	153	8	29	0	0	0	0	0
	112	9	27	0	0	0	0	0
	115	9	5	0	0	0	0	0
	117	9	20	0	0	0	0	0
	120	9	43	0	0	0	0	0
	159	9	18	0	0	0	0	0
	157	10	13	2	0	0	0	0
	158	10	3	0	0	0	0	0
TOTAL	10		182	2	0	0	0	0
$\overline{X}$			18.2	0.2	0	0	0	0
12	114	11	76	0	0	0	0	0
	118	11	110	0	0	0	0	0
	151	11	16	0	0	0	0	0
	155	11	8	1	0	0	0	0
	156	11	45	0	0	0	0	0
	111	12	42	0	0	0	0	0
	119	12	22	0	0	0	0	0
	150	12	76	0	0	0	0	0
	152	12	13	0	0	0	0	0
	154	12	70	1	0	0	0	0
	162	13	18	0	0	0	0	0
	163	13	72	0	0	0	0	0
	168	13	43	0	0	0	0	0
Σ	13		611	2	0	0	0	0
$\overline{X}$			47	0.15	0	0	0	0
15	128	14	70	2	0	0	0	0
	162b	14	29	0	0	0	0	0
	166	14	93	1	0	0	0	0
	110	15	45	0	0	0	0	0
	127	15	10	0	0	0	0	0
	121	16	28	2	1	1	0	0
	122	16	106	1	0	0	0	0
	124	16	148	2	1	0	0	0
	126	16	15	3	1	0	0	0
	129	16	28	0	0	0	0	0
	160	16	82	1	0	0	0	0
Σ	11		654	12	3	1	0	0
			59.45	1.09	0.27	0.09	0	0

.1666

P2

	FISH	SIZE	0.3–0.99	1.0–1.79	1.8–2.59	2.6–3.39	3.4–4.19	4.2–4.99	
	123	17	4	1	0	0	0	0	
	125	17	43	0	0	0	0	0	
	161	17	28	0	0	0	0	0	
	164	18	13	0	2	1	0	0	
18	165	18	35	0	0	0	0	0	
	167	18	34	2	0	0	0	0	
	173	18	14	0	0	0	0	0	
	134	19	2	4	0	0	0	0	
	139	19	3	2	0	0	0	0	
*	177	19	0	0	0	0	0	0	*
TOT	10		176	9	2	1	0	0	
			~~176~~ 17.6	0.9	0.2	0.1	0	0	
	130	20	42	1	0	0	0	0	
	172	20	11	1	0	0	0	0	
	178	20	43	1	0	0	0	0	
	179	20	25	0	0	0	0	0	
21	131	21	2	0	0	0	0	0	
	132	21	10	0	0	1	0	0	
	207	21	7	1	0	1	2	0	
	136	22	18 21	4	2	0	0	0	
	174	22	7	1	0	2	0	1	
	176	22	16	1	0	0	0	2	
Σ	10		184	10	2	4	2	3	
			18.4	1.0	0.2	0.4	0.2	0.3	
*	143	26	0	0	0	0	0	0	*
	185	26	3	0	6	0	0	0	1
	157	26	4	0	0	0	1	0	2
	145	27	6	3	1	1	0	2	3
	149	27	15	1	2	1	0	0	4
27	184	27	15	0	0	2	0	0	5
	146	27	0	0	0	0	0	1	6
*	156	27	0	0	0	0	0	0	*
	183	28	2	0	0	0	1	0	7
	191	28	1	0	0	0	0	2	8
	200	28	11	0	0	0	0	0	9
	206	28	1	0	0	0	1	1	10
Σ	12		58	4	9	3	3	6	
			4.83	0.33	0.75	0.25	0.25	0.5	

P3

		FISH	SIZE	0.3 – 0.99	1.0 – 1.8	1.8 – 2.59	2.6 – 3.39	3.4 – 4.19	4.2 – 4.99	
24		133	23	11	0	0	0	0	0	
		137	23	14	1	0	0	0	0	
		171	23	9	1	0	0	0	0	
		135	24	1	0	0	0	0	0	
		138	24	1	0	0	0	0	1	
	*	169	24	0	0	0	0	0	0	*
		175	24	18	1	0	0	0	0	
	*	180	24	0	0	0	0	0	0	*
		194	24	1	0	3	1	0	0	
		199	24	4	0	0	0	0	1	
		203	24	8	0	1	3	0	0	
		204	24	0	1	1	1	0	0	
		140	25	1	3	2	3	0	0	
		146	25	23	1	0	0	1	0	
		170	25	4	0	0	0	0	0	
		182	25	10	0	0	0	0	0	
		187	25	12	0	0	0	0	0	
		189	25	3	0	0	0	1	2	
		193	25	3	0	0	0	0	1	
		198	25	12	2	0	0	0	1	
		201	25	18	0	0	0	0	0	
Σ		21		153	10	7	8	2	6	
				7.29	0.48	0.33	0.38	0.09	0.29	
30		148	29	6	0	0	0	0	0	
	*	181	29	0	0	0	0	0	0	*
		195	29	9	0	1	0	0	0	
		206	29	0	1	1	0	0	0	
		141	30	0	2	0	1	0	0	
		188	30	3	0	0	0	0	0	
		190	30	6	3	0	0	0	0	
		202	30	3	0	0	0	0	1	
		205	30	7	0	0	0	0	0	
		142	31	2	1	1	0	0	0	
		147	31	1	0	1	0	0	0	
Σ		11		37	7	4	1	0	1	
				3.36	0.64	0.36	0.09	0	0.09	

K/S test. H_0 = obs freq not sig diff from pred freq.

9mm

	1	2	3	4	5	6	n
f_i	182	2	0	0	0	0	184
rel f_i	98.91	1.09	0	0	0	0	
rel F_i	91.32	6.57	.85	.65	.4	.21	
Cum rf_i	98.91	100	100	100	100	100	
Cum r F_i	91.32	97.89	98.74	99.39	99.79	100	
$\lvert d_i \rvert$	7.59	2.11	1.26	0.61	0.21	0	
	·0759	·0211					

$$D_{0.05} = \sqrt{\frac{\ln \frac{1}{\alpha}}{2n}}$$

D = 7.59 (rel freq = 0.0759)

D_{crit} = 0.090

∴ ~~reject~~ accept H_0 – ~~highly~~ sig deviation.

12mm

	1	2	3	4	5	6	n
f_i	·9968	·0032	0	0	0	0	$\boxed{613}$
F_i	·9132	·0657	·0085	·0065	·004	·0021	
~~$\lvert d_i \rvert$~~	~~·0836~~	~~·0625~~					
cf_i	·9968	1	1	1	1	1	
cF_i	·9132	·9789	·9874	·9939	·9979	100	
$\lvert d \rvert$	·0836	·0211	·0126				

D = ~~0.8360~~ 0.0836

D_α ≠ 0. ~~002~~ 0.049

∴ reject H_0

18 mm

	1	2	3	4	5	6	n
f_i	.936	.0479	.011	.005	0	0	188
cu f_i	.936	.984	.995	1	1	1	
Cu F_i	.913	.979	.987	.994	.998	1	
$\lvert d \rvert$	.023	.005	.008	.006	.002	0	

$D = .023$

$D_\alpha = .089$

∴ accept H_0

15 mm

	1	2	3	4	5	6	n
f_i	.9762	.0179	.0044	.0015	0	0	670
cu f_i	.9762	.9941	.9985	1	1	1	
Cu F_i	.913	.979	.987	.994	.998	1	
$\lvert d \rvert$	.063	.015	.011	.006	.002		

$D = 0.063$

$D_\alpha = 0.047$

∴ reject H_0.

21 mm

	1	2	3	4	5	6	n
P_i	.898	.049	.010	.019	.01	.014	205
Cu P_i	.898	.947	.957	.976	.986	1	
Cu F_i	.913	.979	.987	.994	.998	1	
$\lvert d \rvert$	.015	.032	.03	.018	.012		

$D = .032$

$\therefore$ accept H_0

D_α 0.085

30 mm

	1	2	3	4	5	6	n
P_i	.740	.141	.079	.020	0	.02	50
Cu P_i	.740	.881	.96	.98	.98	1	
Cu F	.913	.979	.987	.994	.998	1	
$\lvert d \rvert$	.203	.098	.027	.014	.018		

$D = .203$

$\therefore$ reject H_0.

$D_\alpha = .188$

24 mm

	1	2	3	4	5	6	n
f_i	·823	·054	·037	·043	·010	·033	186
F_i	·9132	·0657	—	—	—	—	
cu f_i	·823	·877	·914	·957	·967	1	
cu F_i	·913	·979	·987	·994	·998	1	
$\lvert d_i \rvert$	·09	·102	·073	·037	·031	0	

D = ·102

D_α = ~~·008~~ ~~·145~~ ·089

∴ ~~accept~~ reject. H_0.

27 mm

	1	2	3	4	5	6	n
f_i	·699	~~·416~~ ·048	·108	·036	·036	·073	83
cu f_i	·699	·747	·855	·891	·927	1	
cu F	·913	·979	·987	·994	·998	1	
d	0.214	·232	·132	·103	·071		

D = 0.232

D_α = 0.146 ~~0.176~~ ~~0.382~~

∴ ~~accept~~ ~~reject~~ reject. H_0.

Individual weight of amphipods eaten.

	9	12	15	18	21	24	27	30
	1.58	4.96	1.97	16.66	5.34	1.58	32.05	2.26
	9 0.79	1.97	1.83	0.55	7.39	10 5.77	32.05	30.83
	10 12.88	12 0.24	0.44	26.21	0.83	5.61	32.05	3.59
	13.59	0.61	1.41	38.69	0.55	1.58	19.54	36.39
		0.55	0.72	54.44	0.92	12.65	19.54	7.39
		9.70	7.07	3.8	2.34	0.92	19.54	81.10
		2.49	1.14	4.35	0.26	7.89	193.64	6.31
		13 1.00	2.04	2.58	0.36	88.86	336.6	8.23
		0.44	0.92	3.8	0.52	43.56	271.70	3.8
		0.79	0.83	4.95	0.30	47.72	84.93	8.76
		0.61	4.38	5.34	0.19	41.07	9.70	12.88
		1.58	3.8	7.23	1.19	221.12	14.07	258.82
		0.29	3.29	2.26	0.41	97.08	14.82	2.60
		1.77	3.01	0.92	0.46	110.3	26.20	22.72
		0.92	2.04	6.31	7.89	101.36	19.54	7.56
			54.43	3.29	0.36	25.85	66.92	25.48
			37.76	1.41	2.83	75.94	23.73	
			18.36	18.94	3.10	11.33	2.26	
			8.23		91.28	26.21	3.8	
			3.59		3.01	37.08	76.66	
			5.21		16.66	46.13	73.79	
			19.54		3.49	36.39	75.94	
			5.21		3.29	84.95	207.08	
			6.31		2.42	54.44	332.86	
			48.8		124.61	13.59	221.12	
			6.61		81.1	4.35	167.26	
			11.76		130.65	7.07		
			5.88		42.55	151.02		
			13.12		19.54	3.2		
					7.89	4.71		
					3.8	3.01		
					4.71	0.79		
					1.77	3.2		
					4.71	2.04		
					1.41	3.10		
					0.72	1.14		
					63.69	1.00		
					96.24	250.98		
					1.41	221.12		
					4.71	114.94		
					225.44	291.78		
					263.60	267.09		
					15.33	3.8		
					38.69	2.83		
						16.66		
						0.61		
n	4	15	29	18	44	46	26	16
$\bar{x}$	7.21	1.86	9.65	11.21	29.27	57.68	91.44	32.41
σ	6.97	2.48	14.0	14.84	58.66	75.98	104.48	63.61

Total wt of amphipods in each fish [not inc ame]

Day	Fish	Workings	Totals
		8 × 0	
8	113 = 0 116 = 0 153 = 0	2.37	2.884
9	112 = 2.37 115 = 0 117 = 0 120 = 0 159 = 0	26.47 10	8.32
10	157 = 26.47 158 = 0.	2.228	1.85
		4.95	
11	114 0 118 0 151 0 155 4.95 156 0	2.20	2.15
12	111 2.20 119 0 150 0 152 0.61 154 10.25	0.61 10.25 13	3.31
13	162 0 163 6.925 168 2.98	6.925 2.16 2.98 7×0	0.55
		11.54 13.12	
14	128 11.54 162b 0 166 14.58	14.58 2.04 2×0	25.43
15	110 2.04 127 6.31	6.31 118.79 11	37.35
16	121 118.79 122 8.80 124 126 129 0 160 13.12	8.80 2.261	
	124 31.07 126 73.05	31.07 73.06	7.47
		17.22	
17	123 17.22 125 0 161 0	119.33	20.17
18	164 119.33 165 0 167 0 173 8.15	26.17 30.87 10	36.77
19	134 26.17 139 30.87 177 0	8.15 2.228	
		5×0	8.19
		5.34 545.07	
20	130 5.34 172 8.23 178 15.38 179 0.36	8.23 0 15.38	128.75
21	131 0 132 99.82 207 362.24	0.36 10 99.82	184.33
22	136 87.09 174 165.99 176 545.07	362.24 2.228 87.09 165.99	41.07
		1.58 221.22 9×0 7.19 343.98	
23	133 1.58 137 7.19 171 13.57 199 221.12 203 334.59 204 113.48	13.57 158.93	133.49
24	135 0 138 255.67 169 0 175 7.89 180 0 194 221.22	221.12 7.00 334.59 7.29 21	164.41
25	140 343.98 146 158.93 170 0 182 7.00 187 7.29 189 587.04	113.48 587.04 255.67 291.78 2.08	
	193 291.78 196 230.39 201 0.61	7.89 230.39 0.61	16.28
		186.25 388.38 193.64	
26	143 0 185 186.25 197 193.64	762.66 3×0	
27	145 762.66 149 116.26 184 149.74 186 250.98 196 0	116.26 149.74 12	227.42
28	183 141.14 191 539.95 200 0 208 388.38	250.98 2.119 141.14	232.46
		539.95	42.21
		2.26 258.82	
29	148 2.26 181 0 195 34.42 206 43.78	96.66 3×0. 32.77	47.51
30	141 96.66 188 0 190 25.45 202 258.82 205 0	25.48 11	75.59
31	142 32.77 147 25.48	34.42 25.45 2.201 47.78	15.12

F.S.	n	$\bar{X}$ AMPS	σ	95%	t
9	4	1.11	0.53	~~[illegible]~~ 0.19	2.776
12	15	0.68	0.27	0.15	2.131
15	29	1.17	0.56	0.21	2.045
18	18	1.25	0.59	0.29	2.101
21	44	1.42	1.13	0.34	2.015
24	46	2.09	1.26	0.37	2.013
27	26	2.68	1.24	0.50	2.056
30	16	1.715	0.95	0.50	2.12

av. amph size eaten.

Mean
Total wt

	HA	275.82
	CO	33.75
	AM	588.34
	NM	42.85
	IS	34.37
	TOT	975.13

23%
→ 0.03

	T. WT	am	ha	nm	IS	co
9 –	36.64.	7.86	82.59	2.59	3.68	3.27
12	104.12	2.06	75.48	15.02	2.33	5.1
15	165.78	15.34	55.46	12.09	11.35	5.75
18	56.56	36.62	50.49	7.05	1.59	4.24
21	162.69	79.14	15.99	0.81	2.21	1.84
24	150.23	88.86	6.42	.37	1.70	2.66
27	236.45	96.18	2.87	0	.63	.32
30	62.75	75.71	6.39	.54	5.16	12.19

% composition across food items

.34
1 1.15
1.8 .58.
10 = 3
20 4
30
100 5
200 10.0
14

$1+\sqrt{x}$
1.15
1.4.

$\sqrt{(1+x)}$

Analysis of variance of total wt amphipods per fish in 8 size groups.

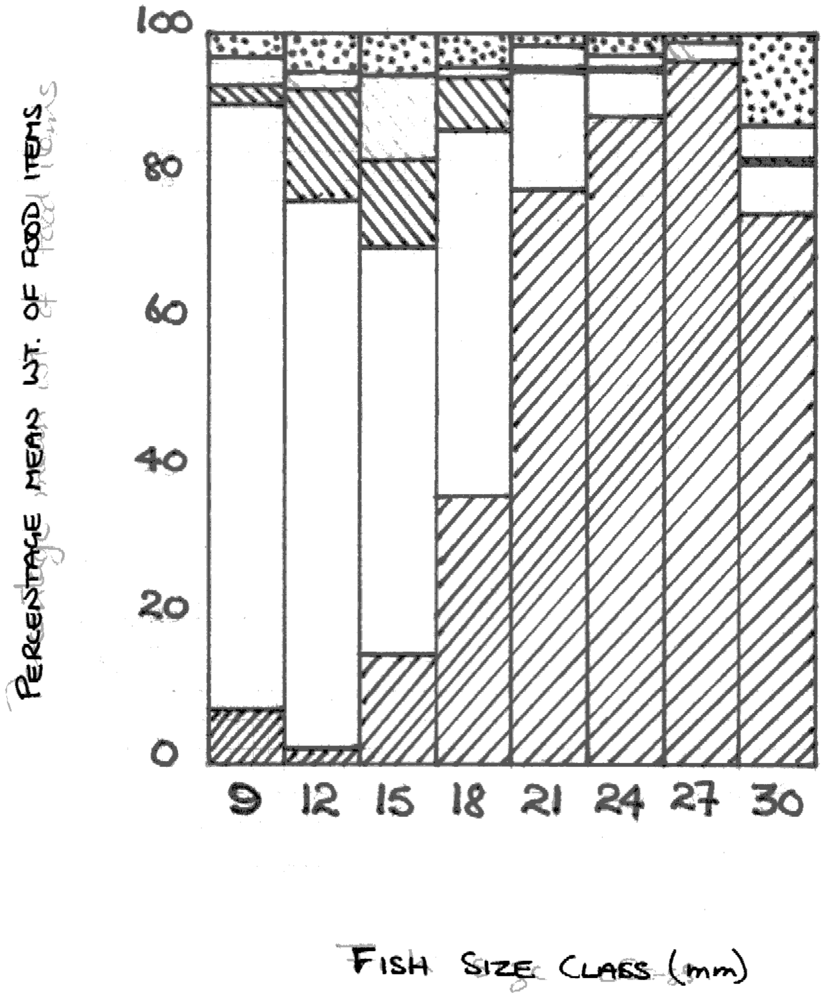
Size class	9	12	15	18	21	24	27	30
	2.37	4.95	11.94	17.22	5.34	1.58	186.25	2.26
	26.47	2.20	14.58	119.33	8.23	7.19	193.64	95.66
	0	0.61	2.04	26.17	15.38	13.57	762.66	32.77
	0	16.25	6.31	30.87	0.36	221.12	116.26	25.48
	0	6.925	118.79	8.15	99.82	334.59	149.74	34.42
	0	2.98	8.80	0	362.24	113.48	250.98	25.45
	0	2.16	31.07	0	87.09	255.67	141.14	47.78
	0	0	73.06	0	165.99	7.89	539.95	258.82
	0	0	13.12	0	543.67	221.22	388.38	0
	0	0	0	0	0	343.98	0	0
		0	0			158.93	0	0
		0				7.00	0	
		0				7.29		
		0				567.04		
						291.78		
						230.39		
						0.61		
						2.08		
						0000		
n_i	10	13	11	10	10	21	12	11
$\sum_{j=1}^{n_i} x_{ij}$	~~33.79~~ ~~26.47~~ 28.84	30.07	279.71	201.74	1287.52	2805.41	2729.0	522.64
$\bar{X}_i$	2.88	2.15	25.43	20.17	128.75	133.49	227.42	47.51
$\frac{(\sum x_{ij})^2}{n}$	83.17	69.55	7112.5	4069.9	165765.6	374777.4	620620.1	24832.1

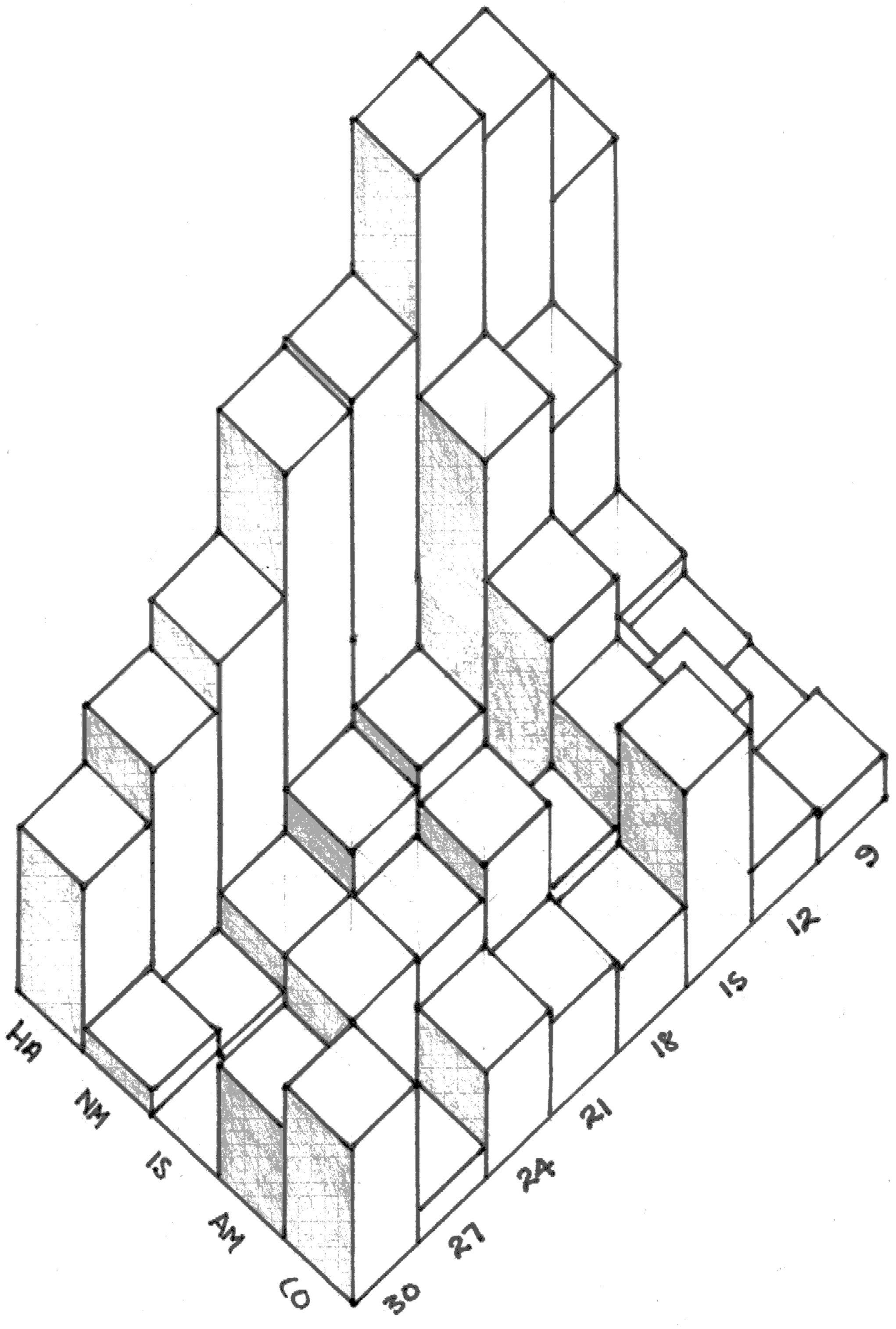
$$\sum \frac{(x_{ij})^2}{n} = 1417330.3$$

$$\sum\sum x_{ij} = 7885.93$$

$$\sum\sum x_{ij}^2 = 2721684$$

* percentages calculated within each size class





HA
NM
IS
AM
CO
30
27
24
21
18
15
12
9

8 - 113, 116, 153

9 - 112, 115, 117, 120, 159

10 - 157, 158,

11 - 114, 118, 151, 155, 156

12 - 111, 119, 150, 152, 154

13 - 162, 163, 168,

14 - 128, 1626, 166,

15 - 110, 127

16 - 121, 122, 124, 126, 129, 160

17 - 123, 125, 161

18 - 164, 165, 167, 173,

19 - 134, 139, 197

20 - 130, 172, 178, 179

21 - 131, 132, 207

22 - 136, 174, 176

23 - 133, 137, 171

24 - 135, 138, 169, 175, 180, 194, 199, 203, 204

25 - 140, 146, 170, 182, 187, 189, 193, 198, 201

26 - 143, 185, 197

27 - 145, 149, 184, 186, 196

28 183, 191, 200, 208

29 - 148, 181, 195, 206

30 - 141, 188, 190, 202, 205

31 - 142, 147

32, 192

33

34

35 - 144

No | Fish Size | Amph sizes | WT = $0.0038\,LT^{2.786}$ mg.

1 mm = 100 µg. .0038

No	Fish Size	Amph sizes
5	9	·73, ·57,
2	10	1·55, 1·58
5	11	1·1
5	12	·79, ·37, ·52, ·5, 1·4
3	13	·86, ·62, ·46, ·57, ·52, ·73, ·4, ·76, ·6,
3	14	·79, ·77, ·46, ·7, ·55, 1·25, ·65, ·8, ·6, ·58, 1·05, 1·0,
2	15	·95, ·92, ·8
6	16	2·6, 2·28, 1·76, 1·32, ·98, 1·12, 1·8, 1·12, 1·2, 2·5, 1·22, 1·5, 1·17, 1·58
4	17	1·7, ·5,
4	18	2·0, 2·3, 2·6, 1·0, 1·05
3	19	·87, 1·0, 1·1, 1·13, 1·26, ·83, ·6, 1·2, ·95, ·7, 1·78
4	20	1·13, 1·27, ·58, ·5, ·6, ·84, ·38, ·43, ·49 ·4, ·34 ·66 ·45 ·47 1·3 ·43
3	21	·9 ·93 3·13 ·92 1·7 ·97 ·95 ·85 ·35 3·0 3·56
3	22	2·38 1·8 1·3 1·0 1·08 ·76 1·08 ·7 ·55 2·75 3·19 ·7 1·08 4·33 4·58 1·65 2·3
3	23	~~2·75 3·19 ·7 1·08 4·33 4·58 1·65 2·3~~ ·73 3·3 1·15 ·73 1·54 ·6
9	24	1·3 3·1, 2·4, 2·48, 2·35, 4·3 3·2, 3·35, 3·25, 1·99 2·93, 1·48, 2·0
9	25	3·2 2·45 2·25 3·05 2·6 1·58 1·05 1·25 3·75 ·94 1·08 ·92 ·57 ·94 ·8 ·93 ·65 ·62 4·5 4·3 3·4 4·75 4·2 1·0 ·9 1·7 ·52
3	26	2·15 2·15 2·15 1·8 1·8 1·8 4·1
5	27	5·0 4·63 3·05 1·4 1·6 1·63 2·0 1·8 2·8 1·93 ·63 1·0
4	28	2·94, 2·9, 2·93, 4·2, 4·98 4·3 3·69
4	29	·83 2·12 ·98 2·25 1·27
5	30	3·0, 1·2 1·32 1·0 1·35 1·55 4·55
2	31	·86 1·9 1·28 1·98
1	32	1·13 ·95 ·67
	33	
	34	
	35	
	36	