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Monthly length/weight relationships for
the herring of the Bay of Fundy (sub-division 4X)

by

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The Canadian Bay of Fundy herring fisheries in sub-division 4X, taken together, operate throughout the year and exploit a wide length-range.

Over the period 1969-1972 length and weight data has been accumulated which allows presentation of length/weight tables on a monthly basis. These are presented in Table 1. Length is overall length, to the end of the extended caudal fin and measured to the millimetre below. Grouping in the table is to the centimetre below. Weight is total weight (gonad included) measured to the nearest tenth of a gram.

Curves of the form $W = aL^n$ have been fitted to the data for each month where W = weight (gm), L = length (mm), a = the coefficient and n = the exponent of the length/weight relationship.

These two parameters are listed for each month in Table 2 together with the length range over which the data was available.

Curves were fitted to mean weights for each centimetre grouping by the method of least squares after logarithmic transformation of both mean length and mean weight.

TABLE 1.

MEAN WEIGHTS FROM 4X SAMPLES - 1969-1972

Size Group (cm)	JANUARY		FEBRUARY		MARCH		APRIL		MAY		JUNE	
	No.	Mean Wt. (gm)	No.	Mean Wt. (gm)	No.	Mean Wt. (gm)	No.	Mean Wt. (gr)	No.	Mean Wt. (gm)	No.	Mean Wt. (gm)
6	-	-	-	-	-	-	-	-	-	-	-	-
7	4	2.3	-	-	4	2.5	1	2.6	-	-	1	2.8
8	43	3.4	23	3.8	30	3.6	39	3.4	1	3.4	-	-
9	148	4.9	55	5.4	213	4.6	191	4.7	48	5.0	28	5.7
10	184	7.0	65	6.9	382	7.0	278	6.4	185	6.5	170	7.7
11	183	9.5	87	8.8	274	12.2	276	8.5	209	8.7	336	10.1
12	159	12.3	53	11.4	211	27.5	194	11.0	207	11.5	396	13.1
13	99	15.7	24	14.5	186	33.1	159	13.8	278	14.7	432	17.2
14	58	19.6	13	17.7	84	22.0	75	17.3	213	18.3	567	21.3
15	28	24.6	9	21.2	56	26.0	30	21.4	126	24.1	602	25.9
16	19	29.7	9	27.9	24	27.8	28	26.2	123	32.1	414	32.1
17	27	36.5	19	32.9	46	33.2	27	30.4	87	37.6	307	38.6
18	25	41.8	34	38.0	52	37.5	28	36.3	59	45.0	181	44.5
19	16	47.9	18	43.7	35	43.8	11	43.6	54	50.3	84	52.1
20	6	55.2	16	49.2	18	50.9	12	51.6	42	53.4	68	61.9
21	1	69.9	8	58.2	2	64.7	16	61.6	44	63.4	105	72.2
22	-	-	2	69.2	2	69.4	7	70.6	55	80.0	130	83.6
23	-	-	-	-	1	77.6	1	98.6	44	90.4	136	94.1
24	-	-	1	91.1	-	-	1	95.4	76	102.6	129	109.9
25	-	-	-	-	-	-	2	107.3	112	118.9	98	128.3
26	-	-	-	-	-	-	-	-	126	131.1	140	143.9
27	-	-	-	-	-	-	3	125.0	152	150.2	207	162.8
28	-	-	-	-	-	-	5	146.5	174	166.4	311	180.2
29	-	-	-	-	-	-	7	167.8	160	191.4	451	203.2
30	-	-	-	-	-	-	4	187.3	165	216.2	528	230.9
31	-	-	-	-	-	-	3	202.5	226	240.4	562	256.2
32	-	-	-	-	-	-	2	223.8	175	271.2	696	281.2
33	-	-	-	-	-	-	-	-	93	297.1	579	310.1
34	-	-	-	-	-	-	-	-	33	363.5	330	338.2
35	-	-	-	-	-	-	-	-	31	382.4	129	363.6

CON'T

TABLE 1 (CON'T)

MEAN WEIGHTS FROM 4X SAMPLES - 1969-1972 (CON'T)

Size Group (cm)	JULY		AUGUST		SEPTEMBER		OCTOBER		NOVEMBER		DECEMBER	
	No.	Mean Wt. (gm)	No.	Mean Wt. (gm)	No.	Mean Wt. (gm)	No.	Mean Wt. (gm)	No.	Mean Wt. (gm)	No.	Mean Wt. (gm)
6	1	1.3	-	-	2	1.5	-	-	-	-	-	-
7	3	2.5	-	-	16	2.7	-	-	-	-	-	-
8	1	2.5	11	4.7	42	4.2	13	4.0	9	3.9	6	2.5
9	2	6.4	65	5.8	137	5.9	45	5.5	39	5.1	19	3.4
10	32	7.7	11	11.1	220	8.0	106	7.3	129	7.3	49	4.6
11	172	11.0	-	-	136	10.9	141	9.7	185	9.7	24	7.0
12	418	14.1	22	14.9	48	14.2	78	13.1	267	12.6	63	9.2
13	592	17.9	117	18.2	38	16.8	43	18.0	235	16.0	64	12.0
14	695	22.0	297	21.5	114	20.7	19	22.6	86	19.9	63	15.7
15	638	27.1	752	25.7	276	26.8	55	25.6	25	23.2	59	19.8
16	601	33.1	800	31.0	466	31.9	161	30.3	17	29.2	27	25.4
17	426	39.4	477	38.3	399	38.9	195	36.2	25	34.9	5	31.3
18	277	47.0	369	46.4	354	46.4	195	42.6	45	41.4	4	31.2
19	125	54.7	288	54.4	317	55.3	201	52.0	56	48.8	6	41.1
20	57	64.6	142	64.7	208	64.7	177	60.8	48	58.3	15	50.4
21	53	76.6	92	75.7	130	75.4	139	70.8	48	58.3	31	61.1
22	62	86.6	103	86.6	102	83.5	61	81.6	10	67.3	28	70.5
23	111	96.6	94	96.0	50	94.7	30	92.3	11	90.0	14	84.0
24	139	109.2	93	112.2	26	105.6	29	102.3	9	97.0	3	97.7
25	114	128.0	131	130.9	41	131.2	36	118.3	17	102.5	1	114.6
26	167	149.1	191	149.3	88	150.9	79	137.5	27	119.5	7	114.5
27	238	170.1	243	168.6	215	167.5	123	154.3	43	132.6	-	-
28	330	189.8	291	187.9	232	184.7	131	176.8	41	157.3	-	-
29	437	209.6	400	206.7	200	207.7	94	200.3	38	182.5	-	-
30	509	235.2	434	231.6	265	236.3	67	218.7	27	202.7	-	-
31	494	258.6	479	257.0	241	263.1	58	241.2	10	254.0	-	-
32	457	283.8	456	283.4	170	286.7	51	265.2	7	258.6	-	-
33	384	312.6	418	310.4	162	309.0	43	287.7	7	266.0	-	-
34	219	339.4	239	334.6	95	336.8	46	316.9	-	-	-	-
35	74	375.9	105	367.9	53	373.5	16	326.7	-	-	-	-

TABLE 2.

Monthly length/weight relationships: 4X herring, 1968-1972

Parameters of relationship -
Weight (gms) = a x lengthⁿ (mm)

Month	Coefficient (a)	Exponent (n)	Length range (mm)
January	2.258 x 10 ⁻⁶	3.208	75 - 215
February	6.430 x 10 ⁻⁶	2.985	85 - 245
March	10.820 x 10 ⁻⁶	2.909	75 - 235
April	3.106 x 10 ⁻⁶	3.128	75 - 325
May	1.580 x 10 ⁻⁶	3.276	85 - 375
June	3.127 x 10 ⁻⁶	3.162	75 - 385
July	2.040 x 10 ⁻⁶	3.242	65 - 375
August	5.788 x 10 ⁻⁶	3.053	85 - 415
September	2.907 x 10 ⁻⁶	3.178	65 - 375
October	4.246 x 10 ⁻⁶	3.100	85 - 385
November	2.130 x 10 ⁻⁶	3.226	85 - 375
December	1.866 x 10 ⁻⁶	3.248	75 - 255

